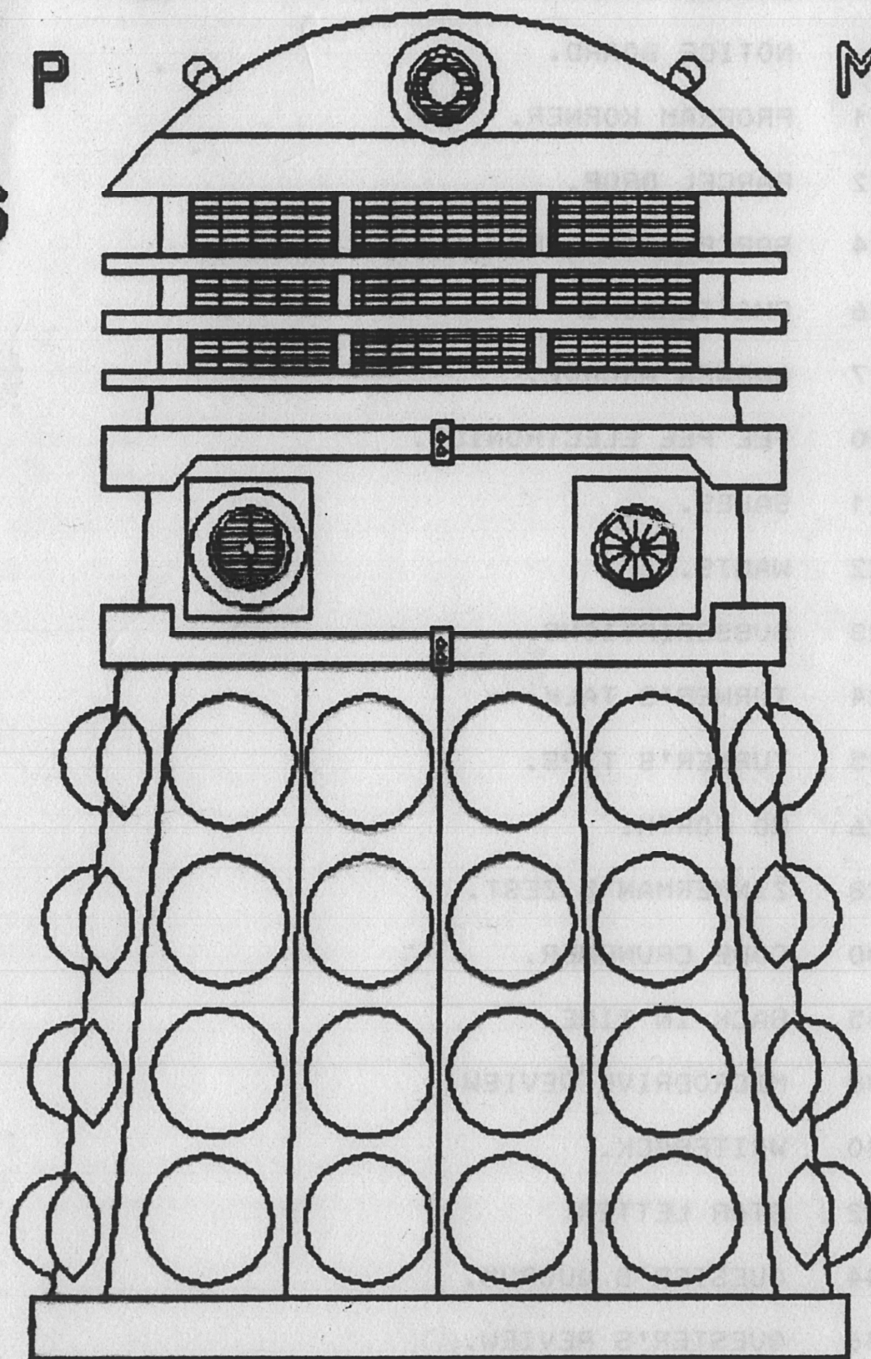


APRIL 1994 ISSUE No6 PRICE £1.00

S P E C T R U M
U K



FOR GLOBAL DOMINATION

EDITORIAL

TODAY IS APRIL THE EIGHTH AND WE CANNOT WAIT ANY LONGER...

SO I AM AFRAID THAT WE ARE GOING TO HAVE TO START THIS ISSUE OF SPECTRUM U.K ON A SAD NOTE FOLKS, DAVID GWYER HASN'T SENT HIS COPY IN FOR THIS MONTH, HE HASN'T CONTACTED US AT ALL, SO THERE IS NO 'BACK TO BASICS ' THIS MONTH.

WE HAD A FEELING AROUND A MONTH AGO THAT DAVID WASN'T REALLY INTO DOING THE SECTION,BUT WE HAD HOPED THAT IF HE DID WANT OUT THEN AT LEAST HE MIGHT GIVE US SOME NOTICE SO THAT WE COULD DO SOMETHING, ANYWAY HE DIDN'T SO ALL THAT WE CAN SAY IS,WE ARE VERY SORRY,WE FEEL EXTREMELY UPSET AT HAVING LET YOU DOWN.

AND MAY WE THANK DAVID FOR THE HELP THAT HE HAS GIVEN THE MAG AND WISH HIM WELL FOR THE FUTURE.

RIGHT THAT'S THE BAD NEWS, NOW TO THE GOOD NEWS, MANY THINGS HAVE HAPPENED OVER THE LAST MONTH,
FIRST LET US WELCOME SOME NEW WRITERS TO THE TEAM,
ANGUS PATTERSON, ANGUS HAS TAKEN OVER FROM BILL, AND WILL DO HIS BEST TO ANSWER MEMBERS PROBLEMS IN HIS ANSWER ARCADE SECTION OF THE MAG, WELCOME ANGUS.

NEXT COMES PAUL HOWARD, WHO HAS KINDLY OFFERED TO DO A SECTION COVERING ALL PROGRAMS THAT MEMBERS SEND IN, SO SEND YOUR PROGS TO PAUL FOLKS AND SEE THEM IN THE MAGAZINE, STARTING NEXT MONTH, WELCOME PAUL,
PAUL HAS ALSO KINDLY OFFERED TO TAKE OVER THE BASIC COURSE FROM DAVID IF HE QUITTS (WHICH HE OBVIOUSLY HAS) BUT JULIE AND I DON'T REALLY WANT TO PUSH TOO MUCH WORK ONTO ONE MEMBER,IT DOESN'T SEEM FAIR TO US.

SO WE NEED ONE OF YOU,AND WE NEED YOU NOW PLEASE WE ARE DESPERATE, IF YOU CAN TAKE OVER THE BASIC COURSE, ON A LONG TERM BASIS THEN PLEASE WRITE IN AS SOON AS POSSIBLE, BECAUSE WE MUST HAVE THE BASIC COURSE UP AND RUNNING AGAIN IN THE NEXT ISSUE, PLEASE WRITE IN NOW, WE URGENTLY NEED YOU.

NOW BACK TO THE NEW WRITERS,
NEXT COMES ARNOLD YATES, ARNOLD WAS 'ASK BILL', HE WAS WORKING UNDER COVER A BIT LIKE THE LONE RANGER,ANYWAY ARNOLD IS DOING A SECTION EACH MONTH ON HIS VAST EXPERIENCES WITH SPECCYS ETC, WELCOME ARNOLD.

THE COVER AND BACK OF THIS AND HOPEFULLY ALL FUTURE ISSUES OF SPECTRUM U.K WAS DESIGNED BY PETER MACDOUGALL, A VERY TALENTED MAN,WELCOME PETER,AT THE MOMENT PETER IS WORKING WITH OLD WOLFGANG TO BRING YOU A SURPRISE... I HOPE IT HAS NOTHING TO DO WITH THAT THING WOLFGANG IS HATCHING IN HIS LAIR ? HE TOLD US IT WOULD ONLY BE A LITTLE EASTER CHICK....

LAST BUT BY NO MEANS LEAST, NICK HANNAFORD WHO IS GOING TO DO A REGULAR FEATURE DEVOTED SOLELY TO THE SPECTRUM +3, WELCOME NICK.

D I L L A N ' S

D E N

THE VIEWS AND COMMENTS ARE OF MY OWN PERSONAL THOUGHTS AND BELIEFS AND NOT THAT OF THE CLUBS.

HI-THERE DILLAN HERE!
ONCE AGAIN, ANOTHER
MONTH OF LETTERS, KEEP
EM' COMING GANG !!

WHAT AN EXCELLENT MAG SPECTRUM UK HAS TURNED OUT,
IT GETS BETTER AND THICKER EVERY MONTH, WITH NEW
WRITERS, NEW COLUMNS, NEWS AND REVIEWS ETC.

KEEP US ALIVE AND HELP US
SURVIVE BY SENDING IN YOUR
MAIL!



NEW COMERS

Well, i think that we are
now familiar with each
other, but for the benefit
of any new comers, back
issues are available so get
SUBSCRIBING !!!

C5-ALIVE !

I was watching the 'HOW DO THEY DO THAT'
programme on the haunted fish tank one night and
to my amazement i saw a race tuned C5. I stood up
in amazement and found it was the work of a chap
called:-

ADAM HARPER of:-

HARPER
CYCLES



ADAM buys up all second hand C5's that he can get
his hands on and then modifies them by putting in
a more powerful electric motor than the original
washing machine unit fitted to the C5. The new
unit being powered by 10 Batteries instead of the
one original. The wheels and tyre's are replaced
with ones off a HARRIER JUMP JET, other wise the
standard tyre's would peel of at 30mph (30



MPH IS TOO FAST FOR ME
BUT...IN A C5.???.HELP!!!



CHEQUERED FLAG

As the programme continued with some more death
defying challenges, (I QUICKLY
SLIPPED A VIDEO IN AT THIS
STAGE) ADAM now attempts to out accelerate
an ESCORT COSWORTH and a FORMULA 1 racing car.
The flag is down and off we go ! and....'low and
behold' it actually does out accelerates the two
fast cars !!!



115 MPH !!

ADAM HARPER boasts capable speeds of 115 mph a
bit different to the 15mph and range of 10 miles
that Sir Clive bragged to the press on the day
of release. The race continued but even though
rain stopped play' so to speak (THAT'S
JUST NOT CRICKET....) on this
occasion, but reached an incredible speed of
50mph in this test.

SPACE CHUTE



With the pedals removed, and slight body
modifications, (for aerodynamic reasons). A
special braking system had to be developed as the
original had been removed. Adam approached the
american SHUTTLE manufactures and opted for the
special parachute which slowed down and stopped
the shuttle, only in a smaller scale but just as
effective.

CHARIOT OF FIRE

Adam is going to attempt a stunt in the near
future a 'DEATH DEFYING ACT' which he hopes to
drive the trusty C5 through a 60 foot tunnel of
fire at a speed of 70 mph.

So beware, if you see a milk float doing 100 mph
towing a C5.....yes it will be Adam, just proves



that it can be done with electric. (OR MAYBE MILK)

IF YOU REQUIRE ANY MORE INFORMATION ON THE INCREDIBLE FAST C5'S CONTACT :-

ADAM HARPER'S C5's
c/o- HOW DO THEY DO THAT
P.O. BOX 3937
LONDON
SE1-9QB



THE ANGUS COLLECTION

I received a letter from ANGUS from SUFFOLK, telling me about his massive SINCLAIR collection through the years. We start with the year:-

1982

A 1K ZX81, quickly fitted with the well known "HISSMAKER" and screen inverter. (WHAT'S THAT THEN?)



1985

A 48K SPECTRUM, Joystick interface, learned to write BASIC programs that took more than one second to LIST and thanked the person who put in the SCROLL query. Then started to write MACHINE CODE (badly) so required the Everyday Electronics Escape interface (magic!), plugged it in with the power on... After it arrived back from being repaired, it was never the same again.



1987

Saw an advert from MILES GORDON TECHNOLOGY, and purchased a +D, drive a 128K SPECCY and pick and poke it all for a little over £200.00



1988

Couldn't afford any software, i was still paying off my mum.



1990

Got the 'SINCLAIR BUG' and started collecting everything and anything SPECTRUM.

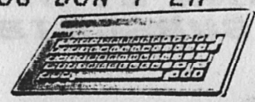


Up to now i have:-

- 1- SPECTRUM 16K with the East London Robotics 64K expansion card
- 19-SPECTRUM'S 48K some working, some not, several issues.
- 11-SPECTRUM 128K various issues all but one working. (ALL RIGHT FOR SPARES THEN EH' ANGUS)
- 4- +D's, interface 1's and 2's, microdrive's, mafadrive's, betadisk, dicoverly, TR disk drive, a teletext adaptor, multifaces, softrom v1, saga 1 & 2 infer red keyboard's, digitisers, graphic tablets, RD tracer, didgimouse, 120 line RADIOFAX receiver, ZX & ALPHACOM printer, 2 BROTHER N1009'S, 2 EPSON RX-80, 2 AMSTRAD CTM664 colour monitors, OHNIREADER, HOUSE interface's and more collection's of KEMPSTON interfaces than KEMPSTON ever had, and a complete set of 'CRASH, YOUR SINCLAIR, SINCLAIR USER and FORMAT. Well over 2000 games and a couple of hundred of utilities, and one BUTTERCRAFT utility which is POWERPRINT and not POWER GRAPHICS...well not yet eh ROY !!! (NOT BEFORE ME YOU DON'T EH' ROY!!!...)



Well what can i say.....i thought i had a lot!.. but a mere 4-SPECTRUM'S. one rubber keyed in excellent condition.



(MY FIRST, STILL BOXED)
One 48K housed in the famous DK-TRONIKS keyboard, one 128K SPECTRUM+ (THE ORIGINAL WITH THE BUILT IN CASSETTE RACK ON THE SIDE, OH SORRY HEAT SINK), one 128K +3 with built in 3"disk drive, (this format was as popular as a pork pie in a synagogue). One +D disk drive (3 1/2"). Two micro-drive's, one light pen, 12 various joysticks, three QL's, five various interfaces, 12 various books and manuals, and about 100 games, utilities, adventures, art package's



etc, etc. Well that's about it really, not very much i know, but i must leave some room in the house for furniture and various parts of my family.

What size is your House Angus? Does the BUG stop there or are you still collecting, if so perhaps house hunting will be next...eh'. If you are flogging anything please send me your price list.



interested in the ANGEL FISH is it KEMPSTON compatible", or the SHOE SHOP, "Have you got a pair of sling backs in a 8, "No i'm sorry only a pair of HORACE and the SPIDER STRAPS or a pair of JET-SET'S with the WILLY soles", well i could go on for ever but i shouldn't be cruel.

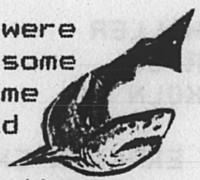


(old habits die hard..eh!..ANGUS...!)

SPECTRUM'S 'FISHY SHOES'

BILL from LANCASHIRE writes with some very interesting news:-

A few years ago there were two shops that bought some business software off me (BIZZICOM) that i had advertised. One was a TROPICAL FISH SHOP and the other a SHOE SHOP. They were far apart from one another as one was in WALES and the other in BRIGHTON.

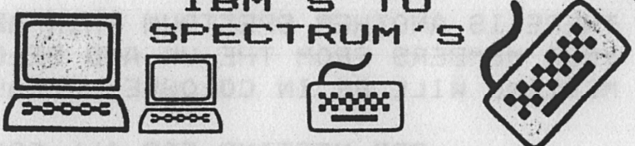


Unfortunately i have mislaid their Address's now, but would be interested to find out if they are still using the SPECCY, or may have up-graded to a QL or even a SAM does anyone know??

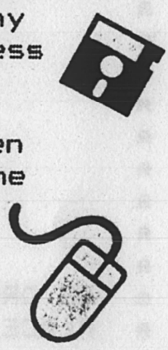
IS THERE ANYBODY OUT THERE!

That's very interesting Bill, i can just imagine it. Picture yourself in the TROPICAL FISH SHOP, Yes can i help you, "yes i'm

SAINSBURY'S UPGRADE FROM IBM'S TO SPECTRUM'S

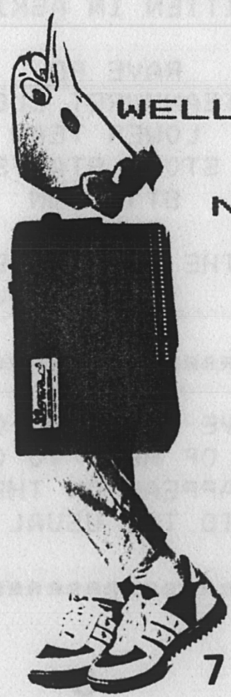


Not really the headlines we would ever expected to see but does anyone know of any other shops or even business that someone is running a SPECCY, maybe using MICRODRIVE'S, TAPES or even a DISK DRIVE??.....drop me a line.



KEEP THE LETTERS COMING THICK AND FAST

WELL GANG UNTIL NEXT MONTH



DILLAN

NOTICE BOARD

SPECTRUM SPRING FAIR

THE SPECTRUM SPRING FAIR WILL BE HELD AT GLOUCESTER
ON SATURDAY APRIL 30TH 1994
OPENS 10.30 CLOSSES 4.30
ADMISSION £1.50P

FROM WHAT WE CAN GATHER FOLKS MANY MEMBERS OF SPECTRUM U.K. WILL
BE THERE, FROM THE UK AND FROM THE CONTINENT WE KNOW FOR SURE
THAT THOMAS EBERLE WILL BE THERE, SO IF YOU ARE GOING REMEMBER
PLUG SPECTRUM U.K. TAKE ALONG A MAG AND FLASH IT AROUND, YES BE
A FLASHER, BUT WHATEVER HAPPENS HAVE A GREAT TIME...

A MESSAGE TO SPECTRUM U.K. MEMBERS FROM THOMAS EBERLE

THERE IS ANOTHER SPECTRUM FAIR HERE IN GERMANY COMING UP, MAYBE
YOUR MEMBERS FROM THE UK AND BELGIUM ETC WILL BE INTERESTED,THE
MEETING WILL BE IN COLOGNE, PLEASE SEE DETAILS BELOW,

SPC MEETING FOR ALL SPECTRUM AND SAM USERS
KOLN (COLOGNE)-DELLBRUCK
26TH APRIL, BEGIN 12.00 AM (HIGH NOON)

IF ANYONE IS INTERESTED TO VISIT GERMANY
THEN PLEASE WRITE TO,

WOLFGANG HALLER
ERNASTR 33
51069 KOLN

HE ORGANISES THE MEETING AND CAN EXPLAIN EXACTLY HOW TO FIND THE
PLACE, BYE BYTE THOMAS.

LOTS OF MEMBERS HAVE WRITTEN IN ASKING FOR PD LIBRARY ADDRESSES

PRISM PD RAVE PD ALCHEMIST RESEARCH
C/O M. SHERWOOD 6 TEANHURST CLOSE C/O A. DAVIS
13 RODNEY CLOSE LOWER TEAN 62 TITHE BARN LANE
BILTON NR RUGBY STOKE STAFFS WOODHOUSE SHEFFIELD
CV22 7HJ ST10 4NN S13 7LN

IF WRITING TO ANY OF THE ABOVE PLEASE MENTION SPECTRUM U.K.
THANK YOU

IF YOU HAVE ANY NEWS OR INFORMATION
THAT YOU THINK WOULD BE OF HELP TO OTHER MEMBERS, THAT YOU WOULD
LIKE TO APPEAR ON THE NOTICEBOARD
THEN PLEASE WRITE TO THE USUAL ADDRESS: SPECTRUM U.K.

NOTICE BOARD

PAUL HOWARD
36 BUDGES ROAD
WOKINGHAM BERKSHIRE
RG11 1PJ

I AM WRITING TO TELL YOU TWO THINGS WHICH OTHER SPECTRUM U.K. MEMBERS MIGHT FIND USEFUL. FIRST OF ALL, THERE IS A COMPANY CALLED SIGMASOFT WHO PRODUCE INEXPENSIVE BUT HIGH QUALITY UTILITIES FOR THE SPECTRUM, THEIR ADDRESS IS:

SIGMASOFT
8 PINE DALE
RAINFORD MERSEYSIDE
WA11 8DP

SECONDLY I AM LOOKING FOR SPECTRUM CONTACTS WHO HAVE A KNOWLEDGE OF BASIC. MY ADDRESS IS AT THE TOP OF THE LETTER FOR ANYONE WHO IS INTERESTED.

SPECTRUM U.K
USUAL ADDRESS

FOR ANY MEMBER THAT IS INTERESTED PETER BEARDWOOD HAS SENT US A REPAIR MANUAL FOR 48K RUBBER KEYBOARD SPECCYS, IF ANYONE WOULD LIKE TO BORROW IT, THEN PLEASE SEND AN S-A-E, THANK YOU.

SYD JENNINGS
FROM PORTSMOUTH ASKS

AS A MATTER OF INTEREST I AM SEVENTY FOUR YEARS OLD. DOES THIS MAKE ME THE OLDEST MEMBER OF SPECTRUM U.K.? (WELL FOLKS IS SYD THE OLDEST MEMBER..AND WHO IS THE YOUNGEST) LET US KNOW AND WE WILL PUT YOU ON THE NOTICE BOARD NEXT MONTH.

THE FOLLOWING TWO MEMBERS ARE REALLY DESPERATE FOR YOUR HELP.

JIM LEESON
18 CLYDE GRANGE
WORTLEY LEEDS
LS12 1XP

PHILIP WHITE
14 ALBERT PLACE
STARBECK HARROGATE
N.YORKS HG1 4QA

JIM REALLY WANTS TO BUY A COPY OF A GAME CALLED 'TRACE ON' IF ANY MEMBER CAN HELP JIM THEN PLEASE WRITE TO HIM AT THE ABOVE ADDRESS, THANK YOU...

PHILIP HAS BEEN SEARCHING FOR THE FOLLOWING FOR A LONG WHILE NOW, 'GO'BY SHODAN 1986 AND 'THINK'BY ARIOLASOFT 1985 IF YOU CAN HELP PHILIP THEN PLEASE CONTACT HIM, THANK YOU

NOTICE BOARD

IMPORTANT NOTICE

WE HAVE JUST RECEIVED THREE LETTERS FROM MEMBERS THAT HAVE BEEN DAMAGED IN THE POST, JULIE HAS BEEN DOING SOME DETECTIVE WORK AND HAS COME UP WITH THE FOLLOWING:

KEVIN MILES FROM CARDIFF, COULD YOU PLEASE WRITE IN AGAIN AS YOUR LETTER WAS MISSING THE ENDING TO THE PROGRAM THAT YOU HAD SENT IN.

JAMES FROM SUNDERLAND, YOUR LETTER WAS SO BADLY DAMAGED THAT WE DON'T KNOW WHAT YOU HAD WRITTEN, PLEASE WRITE IN.

KAREN MOORE FROM ROCHDALE, YOUR LETTER LOOKS LIKE IT HAS BEEN AROUND THE WORLD KAREN, ALL THAT WE HAVE RECEIVED IS A GRAPHICS PAGE, PLEASE WRITE IN.

PLEASE FOLKS SEND YOUR MAIL IN SECURELY WRAPPED AND SEALED, THIS IS THE FIRST TIME WE HAVE RECEIVED DAMAGED LETTERS, AND WE WOULD HATE TO THINK THAT MEMBERS WILL THINK THAT WE ARE IGNORING THEM.

STANCULESCU MARIN, STR. CIURULEASA, NR.3, SECT.4, O.P.7, COD 75445, BUCURESTI, ROMANIA.

STANCULESCU HAS WRITTEN IN TO SEE IF ANY MEMBERS OF SPECTRUM U.K. WOULD LIKE TO WRITE TO HIM, HE IS A DEVOTED SPECCY FAN, HE OWNS A SPECTRUM +, AND WOULD LOVE TO HEAR FROM YOU.

AND MAY WE SAY WELCOME STANCULESCU, YOU HAVE JUST BECOME A MEMBER OF THE BIGGEST AND BEST USERGROUP ANYWHERE ON THE PLANET.

JIM WHITTLE IVYSOFT 17 PARKSIDE.IVYBRIDGE DEVON. PL21-0HU

JIM HAS WRITTEN A COUPLE OF ORIGINAL ADVENTURE GAMES FOR THE SPECTRUM, AND VERY GOOD THEY ARE TOO, IF YOU WANT A COUPLE OF GAMES AT THE BARGAIN PRICE OF, £2.49P FOR THE PAIR. IN FOUR FORMATS (SPECTRUM TAPE, SAM TAPE,OR SAM DISK),AND SPECTRUM +3 PRICE £3.49P,THE GAMES ARE TITLED, PENELESS AND TOOT'N' COME IN. IF YOU WOULD LIKE THEM THEN PLEASE WRITE TO JIM AT THE ABOVE ADDRESS.

AND ONCE YOU HAVE THEM WHY NOT ENTER WOLFGANG'S COMPETITION

PROGRAM KORNER

Calling All Members!

Starting here, next month will be a section on Programs for members to type in. So if you have any Routines or Programs and you would like to share them with other members then please send them in.

Please Send YOUR Programs
To :

Paul Howard
36 Budge's Road,
Wokingham
Berkshire
RG11 1PJ.

And See Your Work In Print !

PARCEL DROP

GAME NOTES

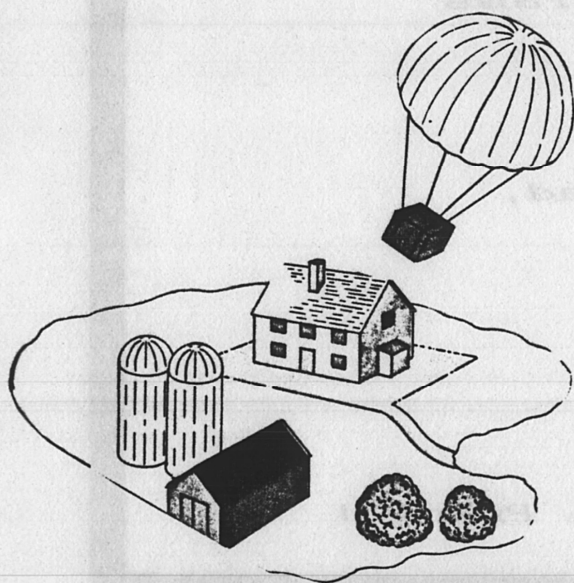
Ten farms in a remote part of the country have been cut off by muddy floodwaters. You are the pilot of a small aircraft; your assignment is to drop a food parcel as close to each farm as possible.

Your aircraft keeps circling each farm until you press capital D to drop a parcel. The centre of the target area is marked by a cross.

You can score up to 400 points for a parcel dropped on target during the first flight pass over any farm. Later drops on target score up to 200 points. Your score will vary depending on how close you are to the target. No points are given for parcels which land outside the target area.

The "TOO LATE" message indicates that you pressed D too late and the parcel has landed off-screen in floodwater.

The object of the game is to gain the highest score after visiting ten farms - scores over 1500 are very good indeed.



```
100 REM PARCELS
110 GOSUB 1000:LET BL=1:GOSUB 2000
120 DATA 0,0,0,63,127,63,1,0
130 DATA 0,2,6,254,255,224,192,0
140 LET W=30:LET D=20:LET L=0:LET B=200
150 BORDER 5:PAPER 5:INK 0:CLS
160 LET S=0:FOR T=1 TO 10:LET P=1:LET
    V=D+1:LET H=0:LET F=FNR(W-16)+3
170 GOSUB 6000:PRINT"FARM ";T:GOSUB 5000
180 PAPER 6:FOR N=0 TO 31:PRINT " ";
190 NEXT N:LET H=F-3:GOSUB 5000
200 PRINT"--<+>--":PAPER 5
210 LET K=2:LET R=FNR(7)+L:LET C=W+1
220 GOSUB 500:GOSUB 7000
230 IF K<>"D" THEN GOTO 220
240 LET V=R+1:LET H=C+1:LET Z=0
250 GOSUB 5000:PRINT"#":GOSUB 500
260 LET NV=V+(2*Z+1)/5:LET Z=Z+1
270 LET NH=H-1:IF NV>D THEN LET NH=H-
    INT((D-V)/(NV-V)+0.5):LET NV=D
280 GOSUB 5000:PRINT " ":LET V=INT(NV)
290 LET H=NH:GOSUB 5000:PRINT"#":GOSUB
    500
300 IF V<D AND H>0 THEN GOTO 260
310 IF V<D THEN LET Q=0:GOSUB 5000:PRINT
    "TOO LATE":GOTO 350
320 IF ABS(H-F)>3 THEN LET Q=0:GOTO 350
330 LET M=ABS(H-F):LET Q=110-5*M*(M+1)
340 IF M=0 THEN BEEP 0.2,0:LET Q=Q+90
350 IF C>0 THEN GOSUB 500:GOTO 350
360 LET S=S+Q*K:LET P=15:GOSUB 6000:PRINT
    "SCORE SO FAR ";S:LET P=1
370 GOSUB 4000:PRINT " "
380 FOR J=1 TO B:NEXT J
390 GOSUB 5000:PRINT "          ":NEXT T
400 GOSUB 6000:PRINT" YOUR TOTAL SCORE
    IS ";S;"          ":PRINT:STOP
500 GOSUB 4000:PRINT " ":LET C=C-1
510 IF C<0 THEN LET C=W:LET K=1
520 GOSUB 4000:PRINT INK 2;U#;Z#:RETURN
```

PARCEL DROP

PROGRAM NOTES

Lines 100-150: Define the 'aircraft' graphics characters, initialise variables and set up screen colours.

Lines 160-200: Print the ground and a randomly selected target area.

Lines 210-230: Move the aircraft across the screen until the key D is pressed.

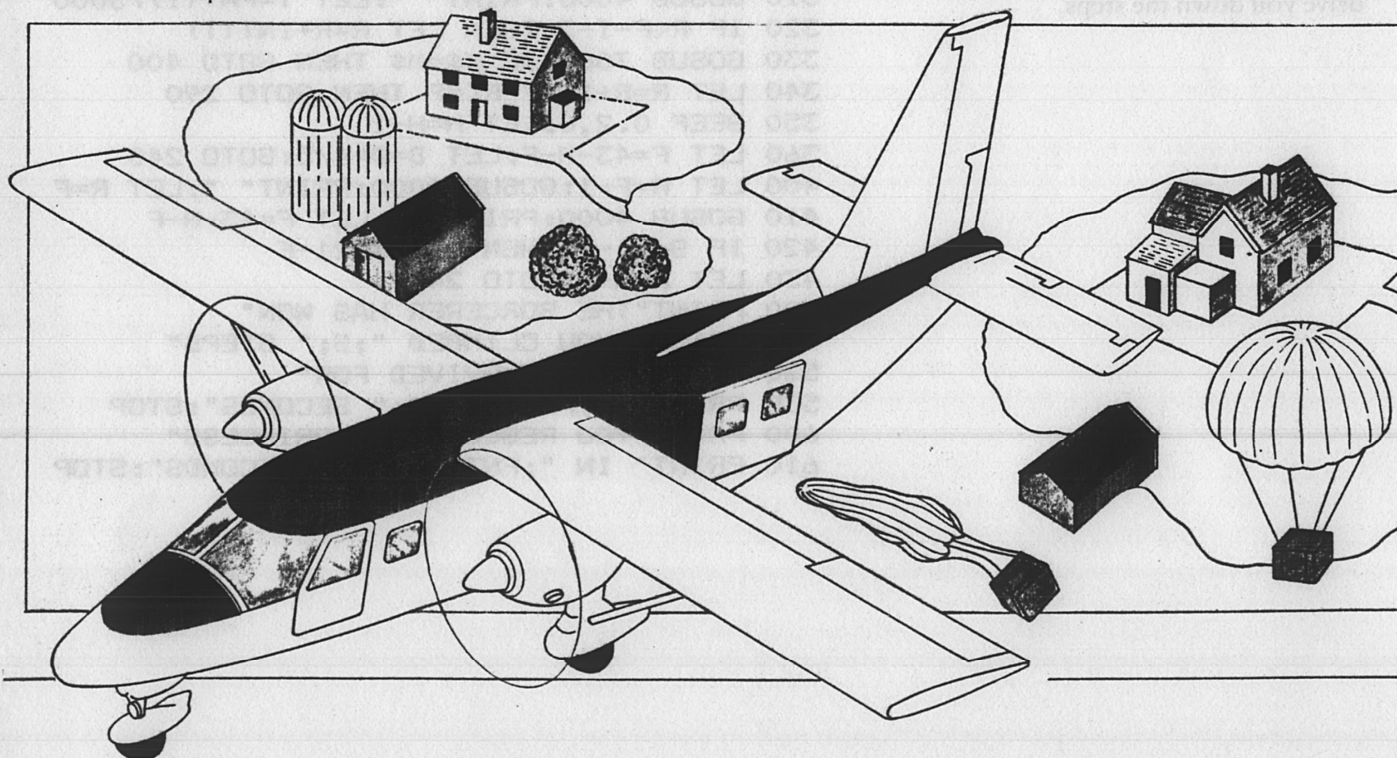
Lines 240-310: Move the aircraft and the parcel until the parcel lands or reaches the edge of the screen.

Lines 320-360: Calculate and print the score.

Lines 370-400: Produce a short pause then either send the computer back to line 160 for the next farm or display the final score.

Lines 500-520: A subroutine to move the plane forward by one character square.

```
1000 FOR N=0 TO 15:READ D:POKE USR"A"+N,D
1010 NEXT N:LET U$=CHR#144:LET Z$=CHR#145
1020 RETURN
2000 DEF FN R(N)=INT(RND*N)+1
2010 RANDOMIZE:RETURN
3000 RETURN
4000 PRINT AT R,C:;RETURN
5000 PRINT AT V,H:;RETURN
6000 PRINT AT L,P:;RETURN
7000 LET K$=INKEY$:RETURN
```



SORCERER'S STEPS

GAME NOTES

You are a gallant knight trying to rescue a helpless princess (or you may be a warrior maiden on a similar quest). To succeed, and win the game, you must reach the top of the steps leading to the sorcerer's tower.

Choose a level of difficulty from 1 (easy) to 20 (impossible), then as you set out to climb, the sorcerer will bombard you with magic symbols. To destroy each of these strange missiles you must press the matching key as quickly as possible.

Slowly you fight your way up the steps. Every time you are hit by a falling symbol, the strength of your enchanted sword is reduced and the game becomes more difficult. The symbols fall more quickly and drive you down the steps.

```
100 REM SORCERER
110 GOSUB 1000:LET BL=0:GOSUB 2000
120 DATA 57,121,121,49,121,125,123,121
130 DATA 112,120,120,120,72,68,68,102,28
140 BORDER 2:PAPER 6:INK 0:CLS
150 DEF FNT(X)=PEEK 23672+256*PEEK 23673
160 LET L=5:LET P=1:GOSUB 6000:PRINT
  "SORCERER'S STEPS"
170 READ W:PRINT:INPUT" LEVEL (1-20) ";D
180 CLS:FOR N=1 TO 704:PRINT PAPER 2;
  "#";:NEXT N
190 LET D=21-D:IF D<1 THEN LET D=1
200 FOR R=0 TO 21:IF R>8 THEN LET W=W-2
210 FOR C=0 TO W:GOSUB 4000:PRINT" "
220 NEXT C:NEXT R:LET S=0:LET H=2
230 POKE 23672,0:POKE 23673,0:LET F=21
240 LET R=F-1:LET C=H:GOSUB 4000:PRINT U$
250 LET R=F:GOSUB 4000:PRINT Z$
260 GOSUB 6000:IF H=1 THEN GOTO 500
270 IF H=27 THEN GOTO 600
280 LET M=FNR(26)+64:LET R=0
290 GOSUB 4000:LET M$=CHR$(M):PRINT M$
300 BEEP D/100,40-R-F
310 GOSUB 4000:PRINT" ":LET T=FNT(1)/3000
320 IF R<F-T-2 THEN LET R=R+INT(T)
330 GOSUB 7000:IF K$=M$ THEN GOTO 400
340 LET R=R+1:IF R<=F THEN GOTO 290
350 BEEP 0.2,0:LET H=H-1
360 LET F=43-H-F:LET D=D*4/5:GOTO 240
400 LET R=F-1:GOSUB 4000:PRINT" ":LET R=F
410 GOSUB 4000:PRINT" ":LET F=43-H-F
420 IF S<21-F THEN LET S=21-F
430 LET H=H+1:GOTO 240
500 PRINT"THE SORCERER HAS WON"
510 PRINT" YOU CLIMBED ";S;" STEPS"
520 PRINT" AND SURVIVED FOR"
530 PRINT" ";FNT(1)/50;" SECONDS":STOP
600 PRINT"YOU RESCUED THE PRINCESS"
610 PRINT" IN ";FNT(1)/50;" SECONDS":STOP
```

SORCERER'S STEPS

PROGRAM NOTES

Lines 100-150: Define the 'knight' graphics characters and set up screen colours.

Lines 160-170: Allow you to choose a level of difficulty.

Lines 180-230: Display the flight of steps and store initial values of the variables.

Lines 240-270: Print the knight and jump to the win/lose message routines if appropriate.

Lines 280-340: Move a randomly selected character down the screen and decide whether the correct key is being pressed.

Lines 350-360: Move the knight one step backwards and reduce the time delay in the character-moving routine.

Lines 400-430: Move the knight one step forward if the correct key has been pressed.

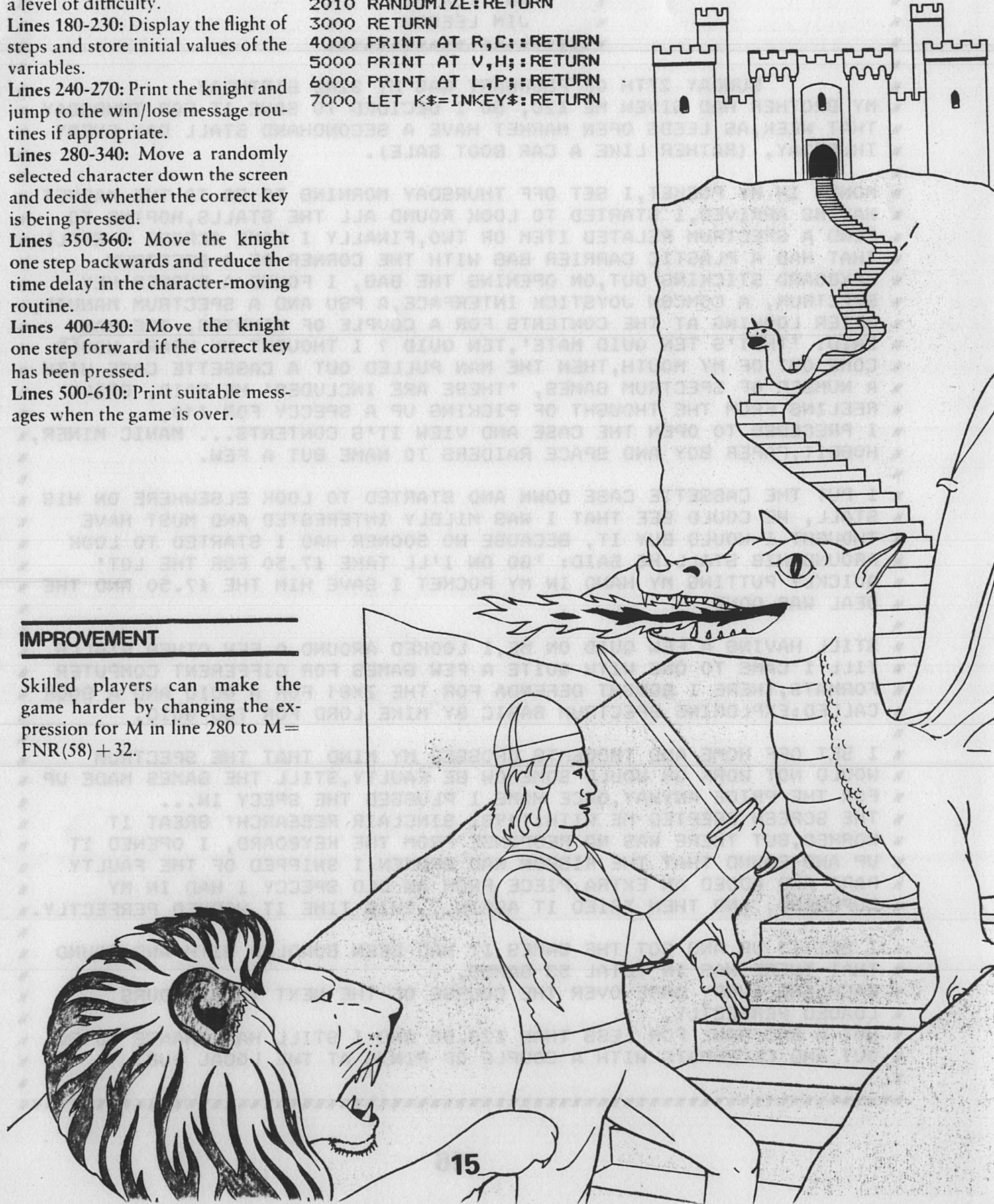
Lines 500-610: Print suitable messages when the game is over.

SPECTRUM:

```
1000 FOR N=0 TO 15:READ D:POKE USR"A"+N,D
1010 NEXT N:LET U$=CHR$144:LET Z$=CHR$145
1020 RETURN
2000 DEF FN R(N)=INT(RND*N)+1
2010 RANDOMIZE:RETURN
3000 RETURN
4000 PRINT AT R,C;:RETURN
5000 PRINT AT V,H;:RETURN
6000 PRINT AT L,P;:RETURN
7000 LET K$=INKEY$:RETURN
```

IMPROVEMENT

Skilled players can make the game harder by changing the expression for M in line 280 to $M = \text{FNR}(58) + 32$.



ANSWER ARCADE

HI, AND WELCOME TO THE ANSWER ARCADE, I'M ANGUS, AND HAVE MANY LETTERS TO ANSWER THIS MONTH, SO, LETS GET ON WITH THEM...

Q) I HAD A LETTER FROM PAUL WATERWORTH FROM YORKSHIRE, REGARDING THE AMX MOUSE, THIS

WAS THE RIVAL TO THE KEMPSTON / DATEL MOUSE, AND CAME WITH IT'S OWN ART PACKAGE. PAUL SAYS THAT HE WANTS A LEAD TO CONNECT THE BUILT-IN PRINTER INTERFACE TO HIS EPSON PRINTER. HE ALSO WANTS TO KNOW IF THERE ARE ANY OTHER ART PACKAGES THAT CAN BE USED WITH IT.

A) THE LEAD YOU NEED IS A STANDARD "BBC TYPE" CENTRONICS LEAD, THIS WILL PLUG STRAIGHT IN, AND AWAY YOU GO. REGARDING ART PACKAGES, THE "ARTIST 2" HAD AN AMX OPTION, AND I BELIEVE THAT THERE WAS A VERSION OF THE "OCP ART STUDIO" THAT COULD BE USED WITH IT, I'LL LOOK INTO IT...

Q) FROM PHIL MUSCART, A SHORT QUESTION WITH A NOT-SO-SHORT ANSWER!... "WHAT DISK DRIVES ARE AVAILABLE FOR THE SPECCY"

A) I KNOW OF 9 DISK INTERFACES AVAILABLE, BUT WILL ONLY LOOK AT THE 4 THAT THERE IS STILL SUPPORT FOR, THOSE BEING THE "+D" AND "DISCIPLE" FROM MGT, THE OPUS DISCOVERY AND THE +3, WHICH HAS AN INTERNAL DISK DRIVE.

THE +3 DISK DRIVE STORES 173K ON EACH SIDE OF A 3" DISKETTE WHICH YOU HAVE TO REMOVE AND TURN OVER SO THE SECOND SIDE CAN BE USED. ACCESS TIMES ARE SLOW - A LITTLE UNDER 12 SECONDS FOR A 32K LOAD. SECONDHAND COST #30 - #80

PROS - FORMATTING TAKES ABOUT 15 SECONDS PER SIDE.

CONS - SLOW, YOU CAN'T USE THE DISK DRIVE IN 48K MODE, THE DISKS COST ABOUT #2 EACH. SOME SOFTWARE WON'T RUN ON THE +3. NO BUILT-IN MAGIC BUTTON FOR COPYING SOFTWARE TO DISK, BUT THESE ARE AVAILABLE FOR #20-#35

THE +D AND DISCIPLE SYSTEMS, THE +D IS THE LITTLE BROTHER OF THE DISCIPLE. EACH HAS A STANDARD DISK DRIVE CONNECTOR, AND A STANDARD PRINTER PORT. THEY COME INTO THEIR OWN WITH AN 80 TRACK 3.5" OR 5.25" PC DRIVE, THESE WILL STORE 780K. ACCESS TIME - 32K LOAD IS ABOUT 3 SECONDS. YOU CAN USE A +D OR DISCIPLE WITH ALL SPECTRUMS UP TO THE GREY +2, TO USE A +D WITH THE BLACK +2A AND +3, A "KLUDGE" BOARD IS REQUIRED. THE DISCIPLE IS NOT MADE ANY MORE, AND ARE RARE ON THE SECOND-HAND MARKET. THE +D IS STILL MADE, AND IS AVAILABLE FROM DATEL FOR #60 WITHOUT DRIVE, #130 WITH. A SECONDHAND +D AND DRIVE WILL BE ABOUT #30-#70

PROS - FAST, BUILT IN "MAGIC BUTTON" FOR COPYING GAMES ONTO DISK, CHEAP DISKS - ABOUT 30-50p EACH

THE OPUS DISCOVERY, WHILE NO LONGER BEING MADE, HAS A WIDE USER BASE, AND A STRONG FOLLOWING AMONG DEVOTEES. THE BASE SYSTEM HAD ONE SINGLE SIDED 180K 3.5" DRIVE, BUT UPGRADES WERE AVAILABLE TO 2 3.5" DOUBLE SIDED 360K DRIVES. SPEED - A LITTLE FASTER THAN THE +3, ABOUT 10 SECONDS FOR A 32K LOAD. COST SECOND-HAND... I'VE NEVER SEEN ANY FOR SALE!

NOW, THE VERDICT, I OWN ALL THREE, AND MUCH PREFER THE PLUS D, FOR EASE OF USE, AND VERSATILITY.

Q) FROM CHAS OWEN IN YORKSHIRE COMES A LITTLE LETTER REGARDING SOFTWARE. HE IS AFTER A PEICE OF SOFTWARE TO HELP HIM MAP HIS FAMILY TREE.

A) THE ONLY GENEALOGY PROGRAM I KNOW OF WAS CALLED "GENEALOGY - FAMILY HISTORY AND DESCENT" WRITTEN BY BEL-TECH IN THE MID 80'S. HOWEVER, I COULD NOT GET HOLD OF A PRESENT ADDRESS OR PHONE NUMBER, SO I ASSUME THEY WENT BUST. HOWEVER, I KNOW OF SEVERAL PEOPLE USING A WORD PROCESSOR, AND THEN INITIATE A SEARCH FOR NAMES OR YEARS SO PEOPLE COULD BE GROUPED THAT WAY. HOWEVER IF ANYONE KNOWS OF A PROGRAM THAT MIGHT SUIT CHAS, PLEASE GET IN TOUCH AND ALL INFORMATION WILL BE PASSED ON WITH HIS THANKS.

Q) CHAS ALSO WANTED TO KNOW HOW YOU GOT THE † SYMBOL - HE HAS SEEN IT IN LISTINGS, BUT WAS UNABLE TO FIND IT IN THE MANUAL.

A) YOU NEED TO PRESS "SYMBOL SHIFT" AND "H" TOGETHER. BUT BE CAREFUL, BECAUSE IT WAS ALSO USED IN A SIMILAR WAY TO THE UNDERLINED LETTER IN THE ABOVE QUERY, I.E. TO INDICATE UDG'S. I HOPE THAT YOU CAN NOW FINISH TYPING IN THAT LISTING.

Q) DAVID IN MANCHESTER WROTE IN ASKING "WHAT ARE THE UNDERLINED CHARACTERS IN THE PROGRAM LISTINGS IN ISSUE 4?".

A) THEY REPRESENT THE USER DEFINED GRAPHICS (UDG'S FOR SHORT) - WHEN YOU COME ACROSS AN INDERLINED LETTER INSIDE " MARKS, YOU SHOULD PRESS "CAPS SHIFT" AND "9" TOGETHER (OR "GRAPH" ON THE SPECTRUM + AND 128'S), THEN TYPE THE LETTERS SHOWN, AND THEN PRESS CAPS SHIFT - 9 (OR "GRAPH") AGAIN.

Q) RIC IN IPSWICH WROTE, ASKING ME "WHERE IS THE BEST PLACE TO PICK UP CHEAP SPECTRUM SOFTWARE?".

A) AS THE WEATHER IS IMPROVING, THE BEST PLACE BY FAR IS THE LOCAL CAR BOOT SALES, LOOK IN YOUR LOCAL FREE PAPERS FOR DETAILS, THESE ARE A HIT AND MISS AFFAIR, IN THAT YOU MIGHT GO 2 WEEKS IN A ROW WITHOUT SEEING A SINGLE STALL WITH AS MUCH AS ONE PEICE OF SOFTWARE ON IT, AND THE THIRD WEEK, YOU ARE FIGHTING YOUR WAY PAST THEM! BUT PERSEVERE, AND SOFTWARE WILL BE YOURS.

PRICES, 50p IS THE NORM FOR GAMES, MORE FOR UTILITIES (ABOUT £2.50 IS THE MAXIMUM ASKED FOR ALL BUT THE RAREST PROGRAMS). THERE ARE MANY GOOD BARGAINS TO BE HAD, BUT TO AVOID DISSAPOINTMENT, CHECK FOR INSTRUCTIONS AND ANY "CODE TABLES" (USED TO STOP THE "PIRATES" COPYING AND SELLING THE GAMES) ARE IN THE BOXES, THERE IS NOTHING WORSE THAT GETTING HOME, AND FINDING YOU CAN'T PLAY JETSET WILLY 2 BECAUSE A SMALL COULoured CHART IS MISSING! (GUESS WHO!!)

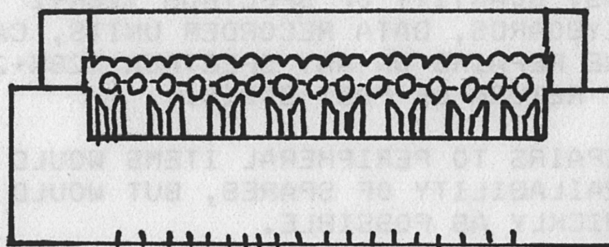
AND A REPLY TO PAUL WATERWORTH'S ADVERT IN ISSUE 5 WANTING DETAILS OF AVAILABILITY OF A 40 PIN ULA, SLB D1678 FOR HIS INTERFACE 1. I HAVE LOOKED IN 15, AND ALL OF MINE CONTAIN A LA15-302. THE SINCLAIR REPAIR MANUAL DOES'NT LIST YOUR CHIP EITHER, SO I AM STUMPED!!, (AND THIS IS MY FIRST COLUMN!!)

Q) AND NOW ONE FROM PHIL MUSCART... EH, I'M SURE I HAD A NOTE FROM HIM ON THE FIRST PAGE..... YUP, I DID. ANYWAY, ON WITH THIS ONE. "HOW CAN I CONNECT A 3.5" DISK DRIVE TO THE +3?".

A) IT CAN BE DONE, ALL YOU NEED IS A DISK DRIVE, A 34 WAY IDC EDGE CONNECTOR, A LENGTH OF 34 WAY IDC CABLE, A 34 WAY IDC SOCKET, A POWER SUPPLY FOR THE DISK DRIVE, A VICE, SOME SELLOTAPE, AND AN ABILITY TO FOLLOW THESE INSTRUCTIONS TO THE LETTRE (OOPS!)

1) STICK A FEW LAYERS OF TAPE ON THE JAWS OF THE VICE, TO PREVENT DAMAGE TO THE PLUGS.

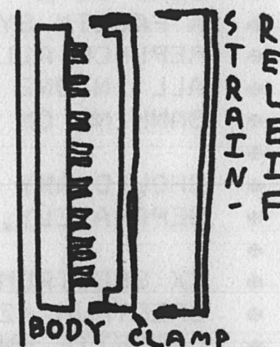
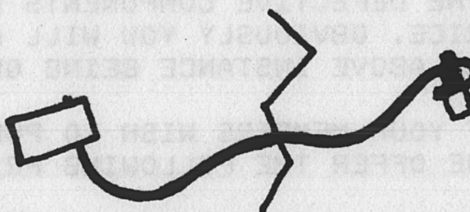
2) INSERT THE IDC CABLE INTO THE EDGE CONNECTOR, INSERT INTO THE VICE, AND MAGING SURE THE CABLE IS SEATED AS SHOWN IN THE DIAGRAM, CLOSE THE VICE UNTIL THE CABLE IS PUSHED ONTO THE METAL PINS. EASY, HUH!



3) THE IDC SOCKET CONSISTS OF THREE PARTS, THE BODY (WITH THE METAL PINS IN IT), THE CABLE CLAMP (THE BIT WITH LITTLE HOLES IN IT THAT ALIGN WITH THE METAL PINS), AND THE STRAIN RELEIF (THE NARROWEST BIT). YOU DO THE SAME WITH THIS AS WITH THE EDGE CONNECTOR - BUT YOU ONLY USE THE BODY AND THE CLAMP, WHEN DONE, FOLD THE CABLE BACK ON ITSELF, INSERT THE STRAIN RELEIF, AND PUSH IT HOME, THERE WILL BE A CLICK (YOU DON'T NEED THE VICE FOR THIS). YOUR CABLE SHOULD LOOK LIKE THIS...

4) IF NOT THEN YOU GOOFED....

5) THE DISK DRIVE SHOULD HAVE A SWITCH (SOMETIMES 2 ROWS OF 4 JUMPER PINS), MARKED D0 - D3), USUALLY NEXT TO IDC CONNECTOR, THIS IS THE DRIVE SELECTOR,



AND WE WANT THE DRIVE TO BE DRIVE 1 (DRIVE 0 IS THE 3" ONE). THE SWITCH (OR JUMPER) SHOULD BE MOVED TO THE SECOND POSITION - (GENERALLY UNMARKED). NOW, WITH THE +3 TURNED OFF, PLUG THE EDGE CONNECTOR INTO THE "DISK B:" PORT, AND THE OTHER END OF THE CABLE INTO THE DISK DRIVE (IT WILL ONLY FIT ONE WAY). APPLY POWER TO THE DISK DRIVE, INSERT AN UNFORMATTED DISK INTO THE 3.5" DRIVE AND TURN ON THE +3 - IF THE "A" DRIVE CONSTANTLY WHIRRS, THEN TURN OFF THE +3, UNPLUG THE EDGE CONNECTOR AND TURN IT UPSIDE DOWN, RE-INSERT AND RE-APPLY POWER. IF THE MENU SCREEN SAYS "DRIVES A:, B: AND M: AVAILABLE" THEN WELL DONE. IF NOT, THEN RE-CHECK THE SWITCH

6) ENTER +3 BASIC AND TYPE FORMAT "B:". THERE YOU HAVE ONE EXTERNAL 173K DISK DRIVE, WITH MUCH CHEAPER DISKS. TO GET 700K ON A DISK... I'LL TRY TO SEARCH SOMETHING OUT FOR NEXT MONTH... UNTIL THEN, QUESTIONS TO THE USUAL ADDRESS, OR... ANSWER ARCADE, SANDY ACRE, LOW ROAD, FRISTON, SAXMUNDHAM, SUFFOLK IP17 1PW.

* **TEE PEE ELECTRONICS** *

* 54 CASTLECROFT STIRCHLEY TELFORD SHROPSHIRE TF3 1UE *

* TELEPHONE 0952 592947 OR FAX 462135 *

* WE WILL UNDERTAKE TO REPAIR ANY SPECTRUM DEVICE, BE IT THE *
* MAIN COMPUTER ASSEMBLY, POWER SUPPLY OR ANY PERIPHERALS, *
* INCLUDING INTERFACES AND PRINTERS. *
*

* REGARDING THE TURN AROUND OF REPAIRS, AS WE HAVE IN STOCK A *
* VAST QUANTITY OF SPECTRUM 128K+2 BOARDS COMPLETE WITH MEMORY, *
* KEYBOARDS, DATA RECORDER UNITS, CASES AND POWER SUPPLY UNITS, *
* THE REPAIRS ON ANY SPECTRUM 128K+2 WILL BE ON THE SAME DAY OR *
* BY RETURN OF POST BASIS. *
*

* REPAIRS TO PERIPHERAL ITEMS WOULD BE SUBJECT TO THE *
* AVAILABILITY OF SPARES, BUT WOULD CERTAINLY BE DEALT WITH AS *
* QUICKLY AS POSSIBLE. *
*

* REGARDING PRICES OF REPAIRS WE FEEL WE CAN OFFER YOUR MEMBERS, *
* AND YOUR MEMBERS ALONE, THE FOLLOWING PRICES. *
*

* FOR ANY REPAIR TO A SPECTRUM 128K+2 AND/OR ITS POWER SUPPLY, *
* OR PERIPHERAL WE WILL CHARGE £15.00 PLUS POSTAGE AND PACKING. *
*

* IN REAL TERMS THIS MEANS THAT IF ONE OF YOUR MEMBERS SHOULD *
* SEND US A +2 WITH A FAULTY KEYBOARD AND A FAULTY TAPE UNIT AND *
* A FAULTY SYSTEM BOARD AND A FAULTY POWER SUPPLY, THEN WE WILL *
* REPLACE ALL THE DEFECTIVE COMPONENTS FOR THE ABOVE MENTIONED, *
* ALL IN ONE PRICE. OBVIOUSLY YOU WILL APPRECIATE THAT WE ARE *
* BANKING ON THE ABOVE INSTANCE BEING QUITE RARE. *
*

* SHOULD ANY OF YOUR MEMBERS WISH TO PURCHASE A SPECTRUM ITEM *
* SEPARATELY, WE OFFER THE FOLLOWING PRICES. *
*

* ZX SPECTRUM 128K+2 WITH TV LEAD (WITHOUT PSU)	* £20.00 + P/P
* SPECTRUM +2 POWER SUPPLY UNIT	* £15.00 + P/P
* CASSETTE UNIT	* £15.00 + P/P
* SYSTEM BOARD INCLUDING MEMORY	* £15.00 + P/P
* KEYBOARD ASSEMBLY	* £15.00 + P/P
* LIGHT GUN	* £15.00 + P/P

* UNFORTUNATELY WE CANNOT AT THIS TIME LOCATE A COMPETITIVE *
* SOURCE OF JOYSTICKS, WE WILL INFORM YOU WHEN WE FIND A SUPPLY *
* THAT WE CAN OFFER AT A GOOD PRICE. *
*

* AT THE MOMENT WE HAVE A VERY LIMITED QUANTITY OF JOYSTICKS AT *
* THE PRICE OF £10.99P + P/P. *
*

* ALSO PLEASE INFORM YOUR MEMBERS THAT I AM ABLE TO MAKE THEM A *
* SPECIAL OFFER OF A SPECTRUM 128K+2 COMPLETE WITH POWER SUPPLY *
* FOR THE PRICE OF £30.00 INCLUSIVE. *
*

* SPECTRUM U.K ARE PLEASED TO BE ASSOCIATED WITH TEE PEE *
* REMEMBER TO MENTION THAT YOU ARE A MEMBER OF SPECTRUM U.K. *
* TO QUALIFY FOR THEIR SPECIAL OFFERS *

SALES

FOR SALE:
SPECTRUM SOFTWARE/HARDWARE ETC.
LOADS OF CLASSIC SOFTWARE.
FOR FULL LIST PLEASE SEND S.A.E TO: MR V.HALLAM AT :
21 CHURCH STREET, HEANOR, DERBYSHIRE. DE75-7AH.

FOR SALE:
SPECTRUM TAPES FOR SALE:
OVER 200 TITLES .FOR FULL LIST PLEASE SEND S.A.E. TO:
DARREN, 720 HIGH ROAD, LEYTONSTONE, LONDON. E11-3NN.

FOR SALE:
128+2 SPECTRUM COMPLETE:
WITH MANUAL, JOYSTICK, PRINTER.
AND OVER 250 GAMES (ALL BOXED).
AS NEW BARGAIN AT £100.00 (O.N.O)
TELEPHONE: PHIL ON (051) 260 8130. AFTER 5.30 P.M



SINCLAIR SPECTRUM ITEMS FOR SALE:
48K RUBBER KEYBOARD TYPE SPECTRUM, LEADS, POWER SUPPLY, MANUALS.
128K SPECTRUM PLUS WITH POWER SUPPLY, LEADS AND MANUAL.
128K+3 SPECTRUM WITH 9 DISKS, LEADS, MANUAL, MULTIFACE 3 COPIER AND
MANUAL AND POWER SUPPLY.
INTERFACE 1 AND 1 MICRODRIVE PLUS CARTRIDGES.
ROTRONICS WAFADRIIVE, WAFER, MANUALS, SOFTWARE AND TRANSFER INFO.
ALL ABOVE IN ORIGINAL PACKAGING.
TIMEX 2040 PRINTER FULLY WORKING (NO PAPER) IN ORIGINAL PACKAGING.
PRISM VTX 5000 MODEM AND MANUAL, WORKING BUT NEEDS RED LED.
MULTIFACE 1 FOR SPECTRUM 48K (OR 128K IN 48K MODE).
THE MULTIFACE NEEDS ATTENTION FROM SUPPLIER.

BOOKS : SUPERCHARGE YOUR SPECTRUM.
ASSY LANGUAGE COURSE AND SOFTWARE.
SOFTWARE : 30+ ORIGINAL GAMES, DATABASE PROGRAMS ETC.

ASKING PRICE FOR +3 :DISKS, MANUALS, LEADS, MULTIFACE 3 ETC : £60.00

ASKING PRICE FOR 128K, 48K, POWER SUPPLIES, INTERFACE 1, MICRODRIVE
CARTRIDGES AND MANUALS. : £40.00

OR COMPLETE JOB LOT AS LISTED FOR : £120.00

ALL ITEMS FULLY WORKING EXCEPT MULTIFACE 1, AND RED LED ON MODEM.

IF YOU ARE INTERESTED IN THE JOB LOT, I ALSO HAVE:
A WORKING TRS-80 9 PIN DOT MATRIX PRINTER AND MANUAL,
WHICH I WILL SUPPLY FREE OF CHARGE.
IF YOU ARE INTERESTED TELEPHONE GEOFF ON: (0438)318992 ANY TIME.

SUBSCRIPTIONS

PLEASE TICK RELEVANT BOX FROM THE FOLLOWING : THANK YOU

12 MONTHS (12 ISSUES)	6 MONTHS (6 ISSUES)	3 MONTHS (3 ISSUES)	1 MONTH (1 ISSUE)
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 I ENCLOSE A CHEQUE / POSTAL ORDER FOR £ _____ MADE PAYABLE TO :
 MISS J.MCQUILLAN.
 NAME : _____ DATE : _____

PRIVATE ADVERT COUPON

					30
					WORDS
					FOR
					ONLY :
					£1.25
					£1.50
					£1.75
					£2.00

 PLEASE REMEMBER TO INCLUDE YOUR : NAME / ADDRESS / TELEPHONE NUMBER.

ADVERT TO APPEAR UNDER HEADING : _____

PLEASE SEND ADVERT / SUBSCRIPTION TO :
 JULIE MCQUILLAN
 C/O SPECTRUM U.K.
 28 ROCKINGHAM DRIVE,
 MELTON MOWBRAY
 LEICESTERSHIRE. LE13-0LQ.



PLEASE MAKE CHEQUES / POSTAL ORDERS PAYABLE TO : MISS J.MCQUILLAN.

IF YOU DO NOT WANT TO DEFACE THIS MAGAZINE:PHOTOCOPIES ARE ACCEPTED.

TURNERS' TALK



HELLO, HELLO, HELLO, I'VE A LOT TO FIT IN THIS MONTH SO I'D BETTER GET RIGHT TO IT. FIRSTLY, I'M GOING TO HELP OUT A READER :- ATTENTION JOHN POWER OF WOKING IN SURREY.. YOU WROTE TO 'DILLANS DEN' LAST ISSUE ASKING IF THERE WAS A SPECTRUM EMULATOR FOR THE PC. WELL, I CAN TELL YOU NOW THAT THERE IS SUCH AN EMULATOR.

GERTON LUNTERS SHAREWARE Z80 IS THE BEST ZX EMULATOR, RECENTLY UPDATED TO SUPPORT 128K AS WELL AS 48K PROGRAMS. YOU SHOULD BE ABLE TO GET DETAILS FROM: B.G. SERVICES, 64 ROEBUCK ROAD, CHESSINGTON, SUREY, KT9 1JX. MORE DETAILS ON THE Z80 WERE IN 'YOUR SINCLAIR' NO. 92 .IF YOU DON'T HAVE A COPY, I'VE COPIED ALL THE DETAILS AND HOPEFULLY YOU'LL FIND THEM SOMEWHERE IN

THIS ISSUE. ALSO IN THE SAME 'DILLANS DEN' DILLAN HIMSELF ASKED WHAT OLD CLIVE SINCLAIR WAS DOING NOW, WELL I DON'T KNOW WHAT HE'S DOING BUT HIS SON CRISPIN HAS JUST FORMED A COMPANY CALLED :- 'SINCLAIR DIRECT' THEY ARE SELLING GAMES FOR THE IBM BY MAIL ORDER.

YIPPEE.. I RECEIVED A LETTER THIS MONTH... IT'S FROM KAREN IN ROCHDALE. SOUND FAMILIAR ? SHE'S THE SAME PERSON THAT IS FORMING SPECTRUM PENPAL U.K. SHE'S ONLY RECEIVED ONE LETTER. I KNOW THE FEELING KAREN... SHE WROTE TO ME IN RESPONSE TO MY COLUMN IN ISSUE 4 , IN WHICH I ASKED IF ANYONE HAD BOUGHT ANY SPECTRUM STUFF RECENTLY. SHE WRITES: I HAVE GOT A GREY 128K+2 MODEL WITH ALPHACOM PRINTER, WAFADRIIVE, MODEM, LIGHTPEN AND GUN NDAROUND 400 GAMES. JUST RECENTLY IT WAS MY BIRTHDAY SO I TREATED MYSELF TO A BLACK SPECTRUM +3 WHICH I GOT FOR £39.99 , NEW IN BOX WITH A LIGHT GUN AND TWO TAPES. ALSO BEEN INVOLVED IN PICKING UP +2'S WITH GAMES AND JOYSTICKS ETC, AND SELLING THE KEYBOARDS/GAMES THAT I HAVE WITH THEM. KAREN ALSO SAYS THAT SHE HAS SOME FRIENDS WHO WILL CONTACT SPECTRUM U.K VERY SOON. GREAT, WE MUST SPREAD THE WORD ABOUT US. COME ON EVERYBODY CONTACT KAREN FOR A PENPAL. YOU CAN SEND LETTERS TO ME AS WELL, DON'T FORGET. ON ANY TOPIC.

NEXT ITEM OF NEWS IS THAT I HAVE COMPLETED 'SPEC TRAC'. FOR THOSE OF YOU WHO DIDN'T READ THE LAST ISSUE, 'SPEC TRAC' IS A CASSETTE TAPE I HAVE BEEN WORKING ON THAT HAS RECORDINGS OF SPECTRUM GAMES MUSIC ON. AS YOU'LL HAVE GATHERED IT IS NOW FINISHED. EACH TAPE IS A FULL 90 MINUTES AND COSTS JUST : £2.00... YES, £2.00 FOR A FULL HOUR AND A HALF OF MUSIC. YOU'D PAY AROUND £8.00 IN A SHOP FOR A PRE-RECORDED TAPE. IF YOU'D LIKE A COPY ALL YOU HAVE TO DO IS TELL ME HOW MANY COPIES YOU WANT, ENCLOSE THE RIGHT PAYMENT, (PLEASE MAKE CHEQUES/POSTAL ORDERS PAYABLE TO: BRIAN TURNER) TELL ME YOUR NAME AND ADDRESS AND SEND TO : SPEC TRAC, 46A KENT AVENUE, ASHFORD, KENT TN24-8NQ. I WILL PAY FOR THE COST OF A BLANK TAPE, POSTAGE, SAE PRINTING AND DUBBING. ALSO THERE IS A SPECIAL OFFER IN EACH TAPE, FOR A CHANCE FOR YOU TO BUY SPECTRUM GAMES COVER POSTERS... SO WHAT HAVE YOU GOT TO LOSE ? THERE ARE OVER THIRTY TUNES ON THE TAPE, SOME OF THE TITLES INCLUDED ARE : UNTOUCHABLES, GHOSTBUSTERS 2, ATHENA, PREDATOR, TURTLES, CAPT. BLOOD, ETC, ETC. YOU'LL FIND THAT 'SPEC TRAC' IS GREAT FOR LISTENING TO WHEN YOU ARE WAITING FOR GAMES TO LOAD. SO SEND FOR IT AND I'LL DISPATCH IT AS SOON AS POSSIBLE. I'M ALREADY WORKING ON VOLUME TWO.

TURNERS' TIPS



NOW ONTO PART TWO OF MY RUN DOWN OF UNUSUAL SPECTRUM GAMES. THIS MONTH I'VE PICKED OUT : 'NINA HAMSTER' FROM CRL.WELL, THE NAME SHOULD SAY IT ALL. BASICALLY IT'S A ONE ON ONE BEAT EM UP. THE DIFFERENCE BEING THAT INSTEAD OF FIGHTING ORDINARY OPPONENTS YOU ARE PITTED AGAINST ALL SORTS OF WEIRD AND WONDERFUL CREATURES. AND YOU YOURSELF PLAY THE NINJA HAMSTER. AMONG YOUR OPPONENTS ARE LOONY LOBSTER, PERILOUS PARROT, MEAN MONKEY AND BARMY BEE. THERE IS A STORYLINE ALONG THE LINES THAT THE NINJA HAMSTER RETURNS HOME AFTER A LONG TRIP ACROSS THE SEAS TO FIND ALL HIS ENEMIES ARE TERRORIZING HIS VILLAGE. EYES BLAZING WITH FURY HE HURLS HIMSELF AT HIS ENEMIES, AND THAT'S

WHERE YOU COME IN. GRAPHICS ARE GOOD, CHARACTERS ARE CARTOONY AND MOVE SMOOTHLY. SOUNDS GOOD TOO. BACKGROUNDS ARE BLANK BUT YOU DON'T NEED FANCY ONES FOR THIS TYPE OF GAME. EACH OPPONENT HAS IT'S OWN WEAKNESS, LIKE HIGH OR LOW KICKS. THE FIRST COUPLE OF OPPONENTS ARE FAIRLY EASY TO DEFEAT BUT THE THIRD ONE IS A REAL PAIN. THERE'S SOME GOOD TOUCHES TO THE GAME, LIKE YOUR ENERGY LEVEL IS REPRESENTED BY AN APPLE WHICH GETS CHUNKS BITTEN OF IT AS YOU OR YOUR OPPONENTS ENERGY LEVEL GOES DOWN, AND WHEN YOU ATTEMPT THE FLYING KICK THE HAMSTER SHOUTS YEEARRGH... ON THE SCREEN. ALSO DURING THE OPTIONS SCREEN NINJA HAMSTERS' EYES GO FROM SIDE TO SIDE LOOKING AT THE TWO OPPONENTS NEXT TO HIM WHEN YOU PRESS A BUTTON. I DON'T THINK I OWN ANY OTHER GAMES FROM CRL, I HADN'T HEARD OF THEM BEFORE. DO ANY OF YOU KNOW WHAT OTHER GAMES THEY PRODUCED IF ANY ? WELL, BASICALLY NINJA HAMSTER IS AN ENJOYABLE GAME AND PROBABLY THE WEIRDEST BEAT EM UP OF ALL. IF YOU'RE FED UP OF NINJA'S TRY A NINJA HAMSTER....

NEXT ISSUE IN PART THREE OF MY RUN DOWN OF UNUSUAL SPECTRUM GAMES ONE OF THE GAMES I'LL BE REVIEWING HAS THE INITIALS : T.B.A.T.B. IT'S A GOLDEN OLDIE.... CAN YOU GUESS WHAT IT IS ?

FINALLY, I COULDN'T LEAVE THIS MONTH WITHOUT TELLING YOU ABOUT WHAT HAPPENED AT A BOOT FAIR THIS WEEK. I WAS STROLLING ALONG AND AS I WENT PAST A STALL SOME BOY ASKED ME : ' DO YOU WANT SOME SPECTRUM GAMES ? ' I REPLIED : 'WHAT ONES HAVE YOU GOT ? ' THEN IT STRUCK ME ,HOW DID HE KNOW I OWNED A SPECTRUM ? ? ? IT TURNED OUT HE ONLY HAD FOUR GAMES AFTER ALL. IT MUST HAVE BEEN A GUESS AS I'D NEVER SEEN HIM BEFORE.... I'VE BEEN WONDERING EVER SINCE, DO I LOOK LIKE A TYPICAL SPECTRUM OWNER ? IS THERE SOMETHING ABOUT ME THAT RADIATES SPECTRUM ? IS THERE A CERTAIN LOOK ? ANYWAY THAT'S IT FOR THIS MONTH. I'VE GOT WRITERS CRAMP NOW SO I'M HAVING A ... BIT ... OF ... AAH ... TROUBLE ... COR BLIMEY ... FINISHING THIS COL ... THIS COL ... COL ... COLUMN OFF. WELL BYEEEEOWWW ... STAYEOWW ... STAY WELL, STAY HAAAAHPY, BRIAN TURN(NAHH)ER.

GO FORTH #
#-----#
#

AN INTRODUCTION BY JOE BLIZARD.
#

DURING THE COURSE OF CORRESPONDENCE WITH ROY IT BECAME APPARENT, #
THAT MEMBERS WANTED TO EXTEND THEIR PROGRAMMING BEYOND BASIC. #
UNFORTUNATELY THEY (LIKE MYSELF) FOUND LEARNING ASSEMBLY LANGUAGE #
WAS A CHORE, ESPECIALLY WHEN A LOT OF BOOKS INSISTED ON THE USE OF #
HEX TO THE EXCLUSION OF CLARITY. TO PEOPLE SUCH AS US FORTH OFFERS #
A VERY ACCEPTABLE ALTERNATIVE. PROGRAMS WRITTEN WITH FORTH #
TYPICALLY RUN MORE THAN TEN TIMES FASTER THAN IN BASIC, AND IN #
FACT CAN BE AS FAST AS MACHINE CODE. IT OFFERS A FLEXIBLE, #
EXTENDABLE AND INTERACTIVE PROGRAMMING ENVIRONMENT. IT IS UNLIKE #
OTHER ALTERNATIVE LANGUAGES SUCH AS 'C' AND 'PASCAL' WHICH ARE #
COMPILED AND THEN RUN, WHICH MAKES DEBUGGING A NIGHTMARE AT BEST #
AND IMPOSSIBLE IN MANY CASES. FORTH CONTAINS BOTH AN INTERPRETER #
AND A COMPILER. THEREFORE ELEMENTS OF A PROGRAM CAN BE RUN TO TEST #
THEM BEFORE THEY ARE COMPILED. SINCE IT'S CREATION IN THE LATE #
SIXTIES / EARLY SEVENTIES FORTH HAS EVOLVED IN MANY DIRECTIONS, #
BUT THERE ARE TWO MAIN VERSIONS : FIG FORTH AND FORTH 79. #
#

PROGRAMMING IN FORTH IS DONE BY USING THE PROVIDED 'DICTIONARY' #
OF 'WORDS' TO CREATE DEFINITIONS OF OTHER 'WORDS'. TO USE AND #
UNDERSTAND FORTH YOU SHOULD TRY NOT TO EQUATE IT IN YOUR MIND #
WITH ANY SIMILARITIES IT HAS WITH BASIC. IT IS A TOTALLY DIFFERENT #
LANGUAGE AND SHOULD BE TREATED AS SUCH. A 'WORD' IN FORTH CAN BE #
SEEN AS THE NAME OF A PREVIOUSLY DEFINED ROUTINE. THIS ROUTINE CAN #
BE RUN BY USING THE 'WORD' TO CALL IT. THE FULL LIST OF 'WORDS' IS #
CALLED THE 'VOCABULARY' AND YOU EXTEND THIS AS YOU DEFINE NEW #
ROUTINES WITH THEIR ASSOCIATED 'WORD'. YOU CONTINUE DEFINING NEW #
'WORDS' UNTIL YOUR PROGRAM IS COMPLETE, AND CAN BE RUN BY CALLING #
JUST ONE 'WORD'. PROGRAMS ARE HELD IN 'SCREENS', AND SEVERAL #
'SCREENS' CAN BE HELD IN MEMORY AT ONE TIME. #
#

THE AIM OF THIS SERIES IS NOT TO TURN YOU INTO A FORTH EXPERT, IT #
WOULD TAKE A BOOK TO SCRATCH THE SURFACE OF ALL THE OPTIONS FORTH #
PROVIDES. INSTEAD I INTEND TO GIVE AN OVER VIEW OF FORTH, AND #
PROVIDE A PLATFORM FROM WHICH YOU CAN BUILD YOUR KNOWLEDGE. I WILL #
BE FEATURING MANY OF THE BUILT IN 'WORDS' AND DESCRIBING THEIR #
USE. THE ONLY WAY TO LEARN ABOUT FORTH IS BY USING AND #
EXPERIMENTING WITH IT. IF YOU SUPPLEMENT THIS WITH FURTHER READING #
FROM YOUR LIBRARY YOU SHOULD SOON BECOME CONFIDENT IN IT'S USE. #
THERE ARE TWO GOOD SPECTRUM SPECIFIC BOOKS YOU SHOULD KEEP AN EYE #
OUT FOR:-ALTERNATIVE LANGUAGES FOR THE SPECTRUM BY RICHARD HURLEY #
AND DAVID VIRGO. THIS WAS PUBLISHED DUCKWORTH, THE OLD PIANO #
FACTORY, 43 GLOUCESTER CRESCENT, LONDON NW1. (ISBN 0 7156 19780). #
THE OTHER IS :- ADVANCED SPECTRUM FORTH BY DON THOMASSON THIS WAS #
PUBLISHED BY MELBOURNE HOUSE (ISBN 0 86161 142X). #

#

GO FORTH

CONTINUED:

TO CONCLUDE THIS MONTHS ARTICLE WE WILL TAKE A LOOK AT THE VARIOUS FORTH PACKAGES AVAILABLE FOR THE SPECTRUM.

WHITE LIGHTNING BY OASIS SOFTWARE.

THIS IS AN EXCELLENT PROGRAM BEING BASED ON FORTH WITH THE ADDITION OF A SPECIAL GRAPHICS SUB-LANGUAGE:- THE 'INTERRUPT DRIVEN EXTENDABLE ANIMATION OF LANGUAGE'. THIS PROGRAM PRODUCES STAND ALONE CODE, AND WAS DESIGNED FOR THE DEVELOPMENT OF ARCADE TYPE GAMES. IT REQUIRES A GOOD KNOWLEDGE OF FORTH AND A PERIOD OF SERIOUS STUDY TO GET THE BEST FROM IT. I WOULD LEAVE THIS ALONE UNTIL YOU FEEL CONFIDENT IN YOUR USE OF FORTH.

FLOATING POINT FORTH BY CP SOFTWARE.

THIS IS THE ONLY VERSION BASED ON FORTH 79, AND WHILE IT IS AN EXCELLENT PROGRAM IN MANY WAYS, IT IS VERY HARD TO OBTAIN THESE DAYS. SINCE WE ARE USING FIG FORTH IN THIS SERIES OF ARTICLES THERE IS LITTLE POINT IN SAYING MORE.

ARTIC FORTH BY SINCLAIR.

HAS A REDUCED DICTIONARY, ONLY ALLOWS ONE SCREEN IN MEMORY AT A TIME, AND IS A MULTI-LOAD VERSION. QUITE ADEQUATE FOR LEARNING PURPOSES BUT NOT THE BEST AVAILABLE.

ABERSOFT FORTH BY MELBOURNE HOUSE.

THE BEST VERSION AVAILABLE AND THE ONE WE WILL BE USING IN THESE ARTICLES. LOADS IN 70 SECONDS, A GOOD DICTIONARY, USER DEFINED GRAPHICS, AND UPTO ELEVEN SCREENS IN MEMORY AT ONE TIME.

DON'T WORRY IF YOU HAVE OR CAN ONLY OBTAIN ARTIC FORTH, AS IT WILL BE PERFECTLY ADEQUATE TO USE WITH THESE ARTICLES. THE ONE DRAWBACK WITH ALL THE ABOVE (WITH THE POSSIBLE EXCEPTION OF WHITE LIGHTNING) IS THE MANUALS PROVIDED WITH THEM. THEY PROVIDE A GOOD REFERENCE TO THE FORTH 'DICTIONARY', BUT VERY LITTLE HELP TO THE FIRST TIME USER, HENCE THESE TUTORIALS.

NEXT MONTH WE TAKE A LOOK AT ARE PROBABLY THE MOST IMPORTANT CONCEPTS IN USING FORTH: REVERSE POLISH NOTATION AND THE STACK.

FRANKIE GOES TO HOLLYWOOD



ZINNEMANS

ZEST

'HELLO ZINNERMAN HERE' I WILL BE DOING SOME REVIEWING, DATING WAY BACK IN THE DAYS OF HAPPINESS AND WEALTH.

SOME THINGS YOU HAVE HAD SOME THINGS YOU WISHED YOU HAD AND SOME THINGS YOU ARE GLAD YOU NEVER HAD!!

Another popular game, which was a very big hit back in 1985 not only on the good ole' SPECCY but on the COMMIE too! (boo, hiss!!) sorry folks the truth always hurts.

THIS MONTH I WILL BE REVIEWING THE EVER POPULAR:-

'FRANKIE GOES TO HOLLYWOOD'

FROM THE VERY SUCCESSFUL SOFTWARE HOUSE



BASED ON THE TOP BAND OF THAT ERA AND INCLUDED THE SMASH HIT "RELAX" FREE!!

TO THE DOME

The aim of the game is to get to the PLEASURE DOME by collecting 99% points, and finding out what's in the corridors of power, it 'aint that easy (as i will explain), but believe me a lot of fun trying.

60 TASKS

You are sent 60 tasks to challenge in your journey from MUNDANESVILLE through to the PLEASURE DOME from tasks of



SKILL, INTELLIGENCE, HEROICS and jolly good LUCK! Whenever you complete these challenges a BAR-CHART will increase in various elements of your personality and pleasure points will be rewarded.

A COMPLETE PERSON

Your goal is to become a complete person, to achieve this you must become 'TOP of the BAR CHARTS' this will be apparent by the letters 'BANG'

that appear above the personality bar chart's and achieving the high points of 99,000 pleasure points and awards you with the minimum requirement of 99% 'A COMPLETE PERSON' and to search for the special door, the door to the ultimate experience:-

THE HEART OF THE PLEASURE DOME.

THE ADVENTURES OF FRANKIE

Your adventure of many tasks begin with no personality in an environment of suburban

boredom, don't be put off by that this is not as it seems. In different streets and different houses you venture through, touch everything collect all the objects, including FLOPPY DISKS, WEDDING RING, PLEASURE PILLS, FLAK JACKET, SECURITY PASS etc.

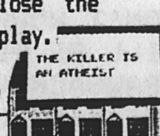
These are in various locations so look every wear, cupboards, fridges, drawers, rooms etc.

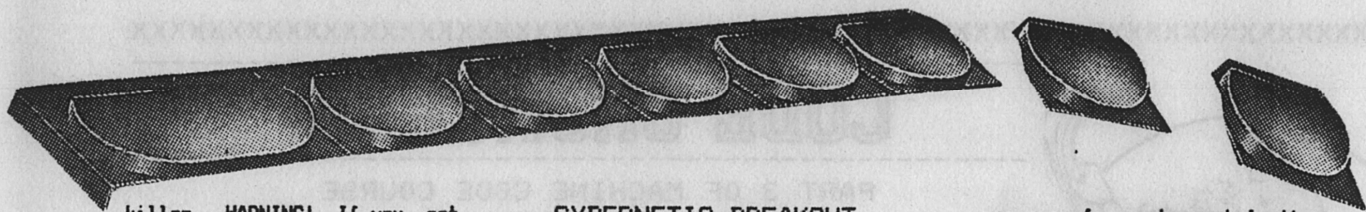
THIS IS WHAT YOU'RE CARRYING

You may check your inventory at any time by pressing the fire button and moving the joystick downwards, using the 'QUIT' icon to close the window and to resume play.

MURDER!!

You will stumble over a dead body, but WHO IS THE KILLER?? Solve the murder mystery by the process of elimination, finding the clues (23) that appear at random in the window on the screen. Walking into the window at the scene of the crime, you can eliminate any suspects by pointing at the





killer. **WARNING!** If you get the killer wrong you will have to re-start the game, **SO JOTTING DOWN SOME CLUES MAY HELP.....!!**



CORRIDORS OF POWER

The windings allow you to move freely within the dome that connects MUNDANESVILLE through other routes like the manholes, different doors and watch out for the fire balls that emerge from the different coloured manholes, Zapping these will create other exits for your escape, learning to use the corridors wisely will add up your points of personality, then finally:- **THE ULTIMATE SCREEN OF THE PLEASURE DOME!**



GAMES AND PUZZLES

Inside the pleasure dome you are fronted with several games & puzzles that you have to complete to gain your personality points through experience and enthusiasm to succeed. There are several main entrances into this world of mind puzzling achievements, one from each street and these entrances from the corridors and the streets give way to:-

THE TERMINAL ROOM

You must use all the gathered information to complete this task, using your inventory and the objects collected to aid in your escape, using the Floppy disks or security pass

SEA OF HOLES

Travel in and out of time and space through the holes to reach the floor below you.



CYBERNETIC BREAKOUT

This game must be completed for each symbol required, you must guide the symbol into the spark and the objects may help you to halve the pain or double your pleasure.

RAID OVER MERSEYSIDE

Stop the bombers from destroying MERSEYSIDE and its shipping, you have a time limit to either destroy or survive by hitting the planes overhead.



THE ZTT ROOM

Break down the wall to enter the control centre and then solve the puzzle using the power of ZAP! to fire and dodging the bullets. You can of course wear some protection and locating the key may help to switch things on and off!

YOU MUST COMPLETE THIS PUZZLE TO WIN!

TALKING HEADS

This communication between the world leaders can get very offensive and disgusting as they converse in spit.

The counter will tell you how many lives you have left.

SHOOTING GALLERY

Take 'POT-SHOTS' at the famous to gain more points of course, this sounds simple.....but? Don't forget to re-load at the bottom of the screen every time.

WAR ROOM

Shoot the symbols in this the last arcade task to gain the pleasure points and there is

one game for each symbol, the power of love may help.



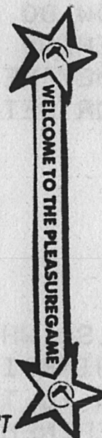
REMEMBER

Develop your personality completely, you must finish all the tasks set to you, and only then you may enter the maze in search of the door that leads to the secret of **SELF DISCOVERY!!**

CLUB LIBRARY

YES FOLKS! FRANKIE GOES TO HOLLYWOOD IS AVAILABLE FROM SPECTRUM UK'S SOFTWARE HIRE SERVICE JUST QUOTE NO-D18 FROM THE 'BIG-GAME' SECTION AT ONLY £2.00 PER WEEK

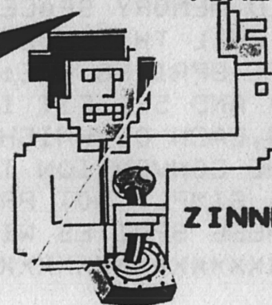
A REAL BARGAIN FOR A EXCELLENT GAME



HAVE YOU WROTE A GAME, DO YOU WANT IT REVIEWING OR WOULD YOU LIKE ME TO REVIEW ANY OF YOUR CHOICE LET ME KNOW?



WELL THAT'S IT FOR THIS MONTH UNTIL NEXT TIME



ZINNERMAN

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CODE CRUNCHER

PART 3 OF MACHINE CODE COURSE
BY JOHN BLACKBURN

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WHAT'S THE PROBLEM SON? LITTLE BOY:DAT PROGRAM FROM LAST MONTH DON'T WORK NONE. HMM,LET'S SEE. AHA,I THINK I SEE THE PROBLEM,LINE 40 SHOULD READ : 'HIGHC DEFB 1,1,1,1,1,1,1'.

LITTLE BOY : WHY DINCHA GET IT RIGHT DA FOIST TIME? LISTEN SON,EVERYNE MAKES MISTAKES,EVEN THE CODE CRUNCHER : 'TO ERR IS TO BE HUMAN' LET THAT BE YOUR LESSON FOR TODAY.

LITTLE BOY:YA NO GOOD BUM,YER ALL WASHED UP.YER GOT MUSCLE 'STEAD OF BRAINS.AH ME,CHILDREN JUST AREN'T AS OBEDIENT AND GRATEFUL AS THEY USED TO BE IN THE FIFTIES WHEN WE SUPERHEROES WERE RESPECTED MEMBERS OF SOCIETY.SIGH... BUT LOOK AN INSPIRING SIGHT,THE CODE CRUNCHER CADETS,READY TO PROTECT AND SERVE.HOLD UP YOUR ASSEMBLERS BOYS.WHERE'S YOURS SON? YOU HAVEN'T GOT ONE HAHahaha. HOW DO YOU EXPECT TO RUN MY PROGRAMS WITHOUT AN ASSEMBLER YOU GREEN BEHIND THE EARS YOUNG WHIPPER SNAPPER RASCAL.YOU'LL HAVE TO GET ONE, THEY'RE AVAILABLE FROM ALCHEMIST PD FOR THE PRINCELY SUM OF 25P. FOR DETAILS SEND AN SAE TO:

ALCHEMIST PD LIBRARY
62 TITHE BARN LANE
WOODHOUSE
SHEFFIELD
S.YORKS. S13-7LN.

ALSO,WHY NOT TALK TO ME ABOUT THIS COLUMN? SPECIFICALLY,HOW DO YOU THINK I SHOULD PROGRAM THIS GAME?SURE,IT'S GOING TO BE VERY MUCH AN IN TO THE SCREEN SCROLLY AFFAIR,BUT THERE ARE ALL SORTS OF POSSIBLE REFINEMENTS:ALIENS,A MAP,A PASSWORD SYSTEM,ENERGY POWER UPS,DANCING GIRLS ETC.IT'S YOUR CHANCE TO TAKE PART IN THE WRITING OF A GAME,HOW INTERACTIVE CAN YOU GET.I'LL TRY TO IMPLEMENT ANY SUGGESTIONS I DON'T THINK ARE TOO HARD.

SEND ALL CORRESPONDENCE TO:

JOHN BLACKBURN
SHANNAS SCHOOLHOUSE
CLOLA, MINTLAW,
ABERDEENSHIRE. AB42-8AE.

RIGHT,STRAIGHT ON TO MY PROGRAM FOR THIS MONTH,AND BOY IS IT A BIG ONE.QUITE A CHALLENGE EVEN FOR CODE CRUNCHER,BUT I'VE SEEN WORSE,JUST TRUST ME CITIZEN AND WE'LL SEE THIS THROUGH TOGETHER.

CONTINUING FROM LAST MONTH,THE SPRITES ARE STORED WITH THEIR BITMAP AND ATTRIBUTE PARTS SEPARATE.NOW,THE BITMAP PARTS FIT SNUGGLY INTO THEIR ALLOTTED MEMORY SPACES,BUT THE ATTRIBUTES ONLY INHABIT SOME OF THEIRS.WHY ?,WELL THIS JUST MAKES IT EASIER TO PROGRAM AS YOU WILL SEE. THE THREE SPRITES ARE:3X4,5X6 AND 7X9.EACH HAS 7X9=63 ATTRIBUTE BYTES.THE 3X4 AND 5X6 FIT IN TO THE TOP LEFT HAND CORNER OF THEIR MEMORY SPACES,EACH OF WHICH CAN BE THOUGHT OF AS A 7X9 RECTANGLE. I WILL USE THE CONVENTION THAT ZERO ATTRIBUTES ARE TO BE IGNORED,THE COMPUTER WILL SIMPLY NOT PRINT ANYTHING WHEN IT COMES TO A ZERO.EMPTY SPACES FOR THESE SPRITES WILL BE POKED WITH ZERO.

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CODE CRUNCHER

CONTINUED

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ALSO A ZERO PAPER (IE ATTRIBUTE IS BETWEEN 1 AND 7) WILL BE MERGED WITH THE BACKGROUND ATTRIBUTES (WHATEVER IS ON SCREEN AT THE TIME). IT'S INK WILL BE THE SAME,BUT NO PAPER WILL BE THAT OF THE BACKGROUND.THIS ALLOWS THE SPRITES TO BLEND IN AND NOT BE SURROUNDED BY UNSIGHTLY ROGUE BLOCKS.JUST MAKE THE PERIMETER OF EACH HAVE PAPER ZERO.

BUT WHERE WILL THESE SPRITES BE PRINTED AND HOW MANY ARE THERE IN ANY ONE SCREEN ? USING A

CO-ORDINATE SYSTEM WITH X GOING RIGHT AND Y GOING DOWN AND THE ORIGIN BEING AT THE TOP LEFT OF THE SCREEN,WE CAN SPECIFY EACH SPRITE BY ITS TOP LEFT HAND CORNER X,Y CO-ORDINATE.Y IS CONSTANT FOR ANY ROW AND X STARTS AT XMAX AND DECREASES IN STEPS OF 'X DECREASE'.

	BACKGROUND	MIDDLEGROUND	FOREGROUND
NO.TO BE PRINTED	8	5	3
XMAX	29	25	22
X DECREASE	4	6	10
Y	1	4	10

ALL THIS INFO IS STORED IN COORD DEFB.
AND THE SIZE OF EACH SPRITE :

	BACKGROUND	MIDDLEGROUND	FOREGROUND
WIDTH (BYTES)	3	5	7
DEPTH (PIXELS)	32	48	72

THIS IS STORED IN REVERSE ORDER IN SIZE.

SCTCH MERELY SERVES TO STORE SOME INFO DURING THE PROGRAM.ASTORE IS A SPECIAL STORE FOR THE 'A' REGISTER.

RIGHT,FIRSTLY THE OUTER LOOP (ROWS) COUNTER B IS STORED ON THE STACK. THE ATTRIBUTE ADDRESS FOR THAT ROW IS FOUND AND STORED ALSO.

110-280 GETS ALL THE INFO IN TABLE 1, FOR THE CURRENT ROW AND STORES IT ON THE STACK.BY THE TIME WE GET TO 280,THE STACK LOOKS LIKE THIS:

```

HIGH      LOW
**STACK TOP**      HIGH - HIGH BYTE
ROW - *           LOW - LOW BYTE
COUNTER *
-----
ATTRIBUTE ADDR
----- * -----
XMAX * Y
-----

```

AND D = NO.TO BE PRINTED
E = X STEP DOWN

285 MAKES C=1 OR 00000001 IN BINARY.YOU SEE,C WILL MOVE ALONG 'A' (CONTAINING THE CURRENT ROW AND GOT FROM THE LAYOUT MEMORY AREA) AND ING WITH IT.A NON ZERO RESULT MEANS THAT A SPTITE IS THERE AND MUST BE PRINTED,ZERO MEANS THERE IS NO SPRITE.FOR THE BACKGROUND,WE NEED TO PRINT ALL 8SPRITES,WHEREAS FOR THE MIDDLE AND FOREGROUND,WE ONLY PRINT THE CENTRE 5 OR 3 SPRITES.THIS IS DONE BY ROTATING C TO THE LEFT ONCE OR TWICE.285 TO 320 DOES THIS RATHER NEATLY.

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CODE CRUNCHER

CONTINUED

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C IS NOW STORED ON THE STACK AND 340 TO 410 GETS THE VERY 'A' I WAS REFERING TO.EFFECTIVELY A=PEEK (31599+YPOS+ROW). 'ROW' BEING 3,2 AND 1 FOR BACKGROUND,MIDDLEGROUND AND FOREGROUND. 31600 IS WHERE THE LAYOUT INFO IS STORED.Y'SEE. C IS GOTTEN BACK AND WE ENTER THE INNER LOOP. STARTING FROM THE RIGHT,IF THE BIT IS SET WE GOTO THE PNT SUBROUTINE TO PRINT OUT THE SPRITE WHATEVER HAPPENS,WE SUBTRACT 'X STEP DOWN' FROM XMAX AND REPEAT 'NO.TO BE PRINTED' TIMES.

THERE'S A FAIR AMOUNT OF FIDDLING AROUND IN THIS LOOP.THE STACK IS FULL OF STUFF RIPE TO BE ACCESSED SO I HAVE USED SCTCH,AT ONE POINT. I'M SURE YOU CAN MAKE SENSE OF IT ALL. HAVING COMPLETED THE LOOP,ALL THIS GARBAGE IS STRIPPED OF THE STACK TO GET TO THE OUTER LOOP COUNTER B.AND THE OUTER LOOP REPEATS. NEXT THE PNT SUBROUTINE STORES EVERYTHING ON THE SCTCH THAT WE WANT TO REMEMBER.721-810 GETS THE STARTING X,Y COORDS FOR THE CURRENT SPRITE OFF THE STACK AND TRANSLATES THEM TO THE CORRESPONDING ADDRESS IN THE ATTRIBUTE FILE.

HL=22528+YX32 +X
820-850 MERELY GETS THE ATTRIBUTE ADDRESS OFF THE STACK,WITHOUT DISTURBING IT.THE SUPER-DOUBLE-NESTED-LOOP-TRIPLE-LUTZ-HALF-NELSON FROM 860-1000,TRANSFERS A WHOLE RECTANGLE FULL OF WRITHING ATTRIBUTES ONTO THE SCREEN (UGH...).AS PROMISED,ZERO'S ARE IGNORED AND 1-7'S ARE MERGED WITH BACKGROUND COLOURS,USING THE MGE ROUTINE. 1050-1270 SHUFFLES SOME INFO FOR THE BENEFIT OF SPRITE.I'LL GET ON TO THAT NEXT MONTH BUT FOR NOW I SHALL LEAVE IT BY JUMPING PAST THE WHOLE LOT (1040).1280-1332 GETS EVERYTHING BACK OF SCTCH,AND 1340 GOES BACK TO THE INNER LOOP (460). AS IT STANDS,THE ROUTINE WILL ONLY PRINT OUR ATTRIBUTE BLOCKS,BUT AT LEAST YOU CAN GET SOME IDEA OF WHATS HAPPENING.NEXT MOTH WE SHALL BE MOVING ON TO HIGHER RESOLUTION SPRITES. OK,SAVE ALL THAT.REMEMBER TO SAVE THE ASSEMBLER SOURCE CODE AS WELL, BECAUSE YOU'LL NEED TO DELETE LINE 1040 NEXT MONTH. REMEMBER THE CODE CRUNCHER RULES :

- 1) ALWAYS SAVE THE SOURCE CODE.
- 2) ALWAYS LOOK BOTH WAYS BEFORE CROSSING THE STREET.
- 3) NEVER JOIN THE COMMUNIST PARTY.

NOW TYPE IN THE BASIC IN LISTING 2 AND RUN IT.IT CREATES SOME VERY SIMPLE SPRITES AND PRINTS THEM ON THE SCREEN.TRY ALTERING : 31600, 31601 AND 31602 TO ALTER THE LAYOUT OF THE SPRITES,AND THE SPRITES THEMSELVES.NOW,RUN 300.A WHOLE LEVEL OF OBSTACLES WILL BE GENERATED AND YOU WILL DRIVE THROUGH THEM POW... ZAP... KABOOM... CRRRRUNCH... THAT'S ANOTHER LOT OF CODE DEMOLISHED.LOOKS LIKE MY WORK HERE IS DONE,CITIZEN. CODE CRUNCHER SIGNING OFF....

AUF WIEDERSEIN,MONTY.....

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CODE CRUNCHER

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LISTING : 1

00002 ORG 31000	00400 ADD HL,BC
00003 JP STT	00410 LD A,(YPOS)
00004 SCTCH DEFB 1,1,1,1,1,1	00420 POP BC
00005 ASTORE DEFB 1	00430 LP1 LD H,A
00006 YPOS DEFB 0	00440 AND C
00007 COORD DEFB 8,5,3,29,25,22	00450 JR NZ,PNT
00008 DEFB 4,6,10,1,4,10	00460 LP9 LD H,A
00009 SIZE DEFB 72,48,32,7,5,3	00470 LD (SCTCH),A
00010 STT LD B,3	00480 RLC C
00020 LP2 PUSH BC	00490 POP HL
00030 LD A,B	00500 LD A,H
00035 LD (ASTORE),A	00510 SUB E
00040 CP 3	00520 LD H,A
00050 CALL Z,STA1	00530 LD A,(SCTCH)
00060 CP 2	00540 PUSH HL
00070 CALL Z,STA2	00550 DEC D
00080 CP 1	00560 JR NZ,LP1
00090 CALL Z,STA3	00570 POP BC
00100 PUSH HL	00580 POP BC
00110 LD A,3	00590 POP BC
00120 SUB B	00595 DEC B
00130 LD E,A	00600 JP NZ,LP2
00140 LD A,B	00610 RET
00150 LD HL,COORD+3	00620 STA1 LD HL,31855
00160 ADD HL,DE	00630 RET
00170 LD B,(HL)	00640 STA2 LD HL,31918
00180 LD HL,COORD+9	00650 RET
00190 ADD HL,DE	00660 STA3 LD HL,31981
00200 LD C,(HL)	00670 RET
00210 PUSH BC	00680 IN2 RLC C
00220 LD HL,COORD	00690 IN1 RLC C
00230 ADD HL,DE	00700 RET
00240 LD B,(HL)	00710 PNT LD A,H
00250 LD HL,COORD+6	00711 LD (SCTCH),A
00260 ADD HL,DE	00712 LD A,D
00270 LD E,(HL)	00713 LD (SCTCH+1),A
00280 LD D,B	00714 LD A,E
00285 LD C,1	00715 LD (SCTCH+2),A
00290 CP 2	00716 LD A,C
00300 CALL Z,IN1	00717 LD (SCTCH+3),A
00310 CP 1	00721 POP BC
00320 CALL Z,IN2	00730 PUSH BC
00330 PUSH BC	00740 LD DE,32
00340 LD HL,31599	00750 LD HL,22528
00350 LD C,A	00760 LP6 ADD HL,DE
00360 LD B,0	00770 DEC C
00370 ADD HL,BC	00780 JR NZ,LP6
00380 LD A,(YPOS)	00790 LD D,0
00390 LD C,A	00800 LD E,B

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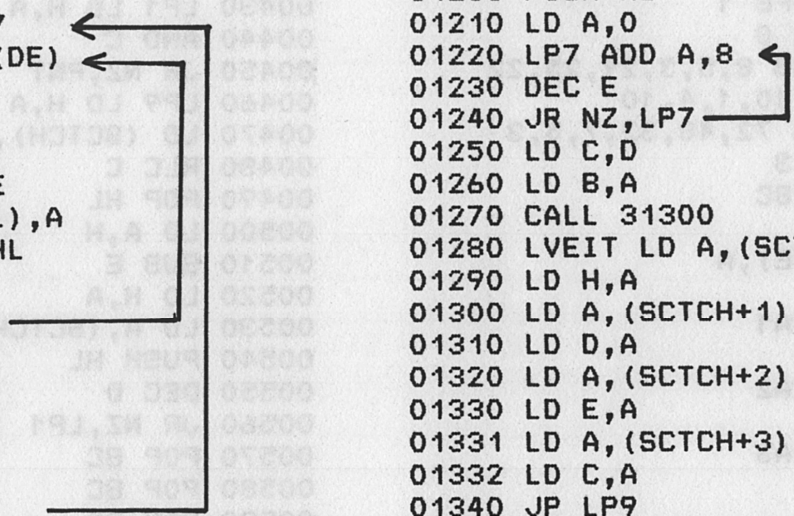
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CODE CRUNCHER

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LISTING : 1 CONTINUED

00810 ADD HL,DE	01160 DEC HL :DEC HL:DEC HL
00820 POP BC	01170 LD B,(HL)
00830 POP DE	01180 POP HL
00840 PUSH DE	01185 POP DE :PUSH DE
00850 PUSH BC	01190 PUSH BC
00860 LD C,9	01200 PUSH HL
00870 LP4 LD B,7	01210 LD A,0
00880 LP3 LD A,(DE)	01220 LP7 ADD A,8
00890 CP 0	01230 DEC E
00895 JR Z,SKIP	01240 JR NZ,LP7
00900 CP 8	01250 LD C,D
00905 CALL C,MGE	01260 LD B,A
00910 CLR LD (HL),A	01270 CALL 31300
00920 SKIP INC HL	01280 LVEIT LD A,(SCTCH)
00930 INC DE	01290 LD H,A
00940 DJNZ LP3	01300 LD A,(SCTCH+1)
00950 PUSH DE	01310 LD D,A
00960 LD DE,25	01320 LD A,(SCTCH+2)
00970 ADD HL,DE	01330 LD E,A
00980 POP DE	01331 LD A,(SCTCH+3)
00990 DEC C	01332 LD C,A
01000 JR NZ,LP4	01340 JP LP9
01010 JR LVEIT	01350 AD1 LD HL,32044
01050 LD A,(ASTORE)	01360 RET
01060 CP 3	01370 AD2 LD HL,32140
01070 CALL Z,AD1	01380 RET
01080 CP 2	01390 AD3 LD HL,32380
01090 CALL Z,AD2	01400 RET
01100 CP 1	01500 MGE PUSH DE
01110 CALL Z,AD3	01510 LD D,A
01120 PUSH HL	01520 LD A,(HL)
01125 LD HL,SIZE+2	01525 AND 248
01130 LD E,A:LD D,0	01530 OR D
01140 ADD HL,DE	01535 POP DE
01150 LD C,(HL)	01540 RET



XX

LISTING : 2

5 PAPER 0: BORDER 0: CLS	130 POKE 31602,BIN 11111111
10 FOR N=1 TO 3	140 LET Z=USR 31000
20 READ A,B,ADDR	150 STOP
30 FOR Y=1 TO B	200 DATA 3,4,31855,5,6,31918,7,9,
40 FOR X=1 TO A	31981
50 POKE ADDR,(N+(X+Y)/2)*8	300 FOR N=1 TO 255
60 LET ADDR = ADDR+1	310 POKE 31599+N,RNDX255
70 NEXT X	320 NEXT N
80 LET ADDR = ADDR+7-A	330 FOR N=0 TO 254
90 NEXT Y	340 POKE 31010,N:REM YPOS
100 NEXT N	350 LET Z=USR 31000
110 POKE 31600,BIN 11111111	355 PAUSE 5:CLS
120 POKE 31601,BIN 11111111	360 NEXT N

XX

* **BACK IN TIME...** *
* * * * *

With Arnold Yates

* THE FOLKS AT SPECTRUM U.K. WROTE TO ME RECENTLY TO ASK IF I WOULD *
* BE INTERESTED IN WRITING A MONTHLY ARTICLE ON MY EXPERIENCES OVER *
* THE YEARS OF USING SIR CLIVES COMPUTERS, HARDWARE, SOFTWARE, AND *
* WHAT HAVE YOU. *
* * * * *

* BEFORE I COMMENCE ON THIS MIGHTY TASK, LET ME JUST SAY THAT FROM *
* TIME TO TIME I WILL BE QUOTING FIGURES FROM MAGAZINES SUCH AS *
* YOUR SINCLAIR, SINCLAIR USER ETC, WITH REFERENCE TO SALES FIGURES, *
* AND TECHNICAL INFORMATION. *
* * * * *

* SO WHERE TO BEGIN THIS EPIC JOURNEY... *
* WELL AT THE BEGINNING SEEMS AS GOOD A PLACE AS ANY... *
* * * * *

* THE VERY FIRST HOME COMPUTER AIMED AT THE MASSES WAS THE ZX80, *
* I DID OWN ONE OF THESE BUT IT NEVER DID WORK SO I CANNOT REALLY *
* COMMENT ON IT, *
* EXCEPT TO SAY THAT THEY ARE VERY COLLECTABLE INDEED TODAY. *
* * * * *

* MY INTRODUCTION INTO THE FASCINATING WORLD OF COMPUTERS CAME IN *
* 1983, I WAS 58 YEARS OLD AND WAS GIVEN A ZX81 IN ITS ORIGINAL BOX *
* WITH THE PRICE STILL ON THE SIDE, AND THIS FOR ME WAS TO BE THE *
* START OF AN AMAZING HOBBY. *
* * * * *

* AROUND 1982 YOU COULD BUY A SPECIAL BUILD IT YOURSELF ZX81 KIT *
* FOR THE PRINCELY SUM OF £49 95P PLUS POSTAGE AND PACKING, OR A *
* READY BUILT ONE FOR £69 95P, YOU PAID YOUR MONEY AND TOOK YOUR *
* CHOICE, THE BASIC ZX81 ONLY HAD 1K OF MEMORY, THERE WAS ALSO AT *
* THIS TIME COMING ONTO THE MARKET A VAST AMOUNT OF ZX81 HARDWARE *
* ADD ONS. *
* * * * *

* IE, DK TRONICS KEYBOARD, 16K RAMPAKS, 32K RAMPAKS, MEMOPAK 64K *
* MEMORY EXTENSION, CENTRONICS INTERFACES, GAMES AND UTILITIES *
* GALORE, IT SEEMED LIKE THE WHOLE WORLD HAD GONE COMPUTER CRAZY, *
* BUT ONE OF THE MAIN DRAWBACKS I FOUND WHEN USING THE ZX81 WITH A *
* RAMPAK FITTED WAS (THE DREADED WOBBLE), YOU WOULD BE BUSY TYPING *
* IN A PROGRAM AND BE JUST ABOUT FINISHED WHEN YOU WOULD PRESS JUST *
* A LITTLE TOO HARD ON THE TOUCH PAD KEYBOARD THUS MOVING THE *
* COMPUTER SLIGHTLY AND CAUSE A CRASH... *
* ALL THAT HARD WORK TYPING IN GONE. *
* * * * *

* I GOT AROUND A LOT OF THESE PROBLEMS BY STICKING VELCRO ABOVE THE *
* EXPANSION PORT AND ON THE RAMPAK THIS WAS A VAST IMPROVEMENT, *
* THEN THANKFULLY IN 1983 AMONGST THE VAST AMOUNT OF ADD ONS *
* SOMEONE CAME UP WITH THE (WOBBLE STOPPER), YOU SIMPLY TURNED A *
* THUMBSCREW UNTIL THE RAMPAK WAS FITTED FIRMLY TO THE ZX81. *
* * * * *

* YOU COULD EVEN TURN YOUR ZX81 SYSTEM INTO A PORTABLE COMPUTING *
* CENTRE, THAT IS FOR A PRICE YOU COULD BUY A CUSTOM CASE TO HOLD *
* YOUR ZX81, TAPE RECORDER, RAMPAK, THE ZX81 PRINTER, 5 CASSETTES, *
* LEADS ETC, THIS WOULD SET YOU BACK £36 95P. *
* * * * *

*
* **BACK IN TIME...** *
* *
* *

With Arnold Yates

* IN SEPTEMBER YOU COULD PURCHASE SOFTWARE OF ALL DESCRIPTIONS IE, *
* GAMES, EDUCATION, BUSINESS, HOUSEHOLD, EVERYTHING IMAGINABLE IN *
* FACT PRICES RANGED ANYWHERE FROM £4 95P TO £9 95P. *

* THE MARKET WAS STEADILY BEING SWAMPED WITH HARDWARE, KEYBOARDS, *
* PRINTERS ETC ETC, ONE OF THE BEST KEYBOARDS OUT AT THE TIME WAS *
* THE KAYDE ELECTRONIC SYSTEMS ZX 80/81 KEYBOARD WITH REPEAT KEY, *
* THIS WAS A VAST IMPROVEMENT ON THE ORIGINAL ZX81 TOUCH PAD, THE *
* COST OF THE KAYDE WAS £37 95P. *

* OF COURSE EVERY BUDDING COMPUTER OWNER HAD TO HAVE A PRINTER, *
* THEY CAME IN ALL SHAPES AND SIZES FROM THE VERY FIRST ONE, THE ZX *
* THERMAL PRINTER WHICH OFFERED OWNERS THE CHANCE TO PRINT OUT HARD *
* COPY OF THE FULL ASC11 CHARACTER SET INCLUDING LOWER CASE *
* CHARACTERS AND HIGH RESOLUTION GRAPHICS, THE COST OF THIS LITTLE *
* WONDER MACHINE WAS £59 95P. *
* THE ZX PRINTER PLUGGED INTO THE EXPANSION PORT AND USED ALUMINIUM *
* TYPE PAPER, 5 ROLLS WOULD SET YOU BACK £11 95P, *
* EACH TIME YOU USED THE PRINTER THERE WAS ALWAYS THE WORRYING *
* SMELL OF BURNING, THIS WAS CAUSED BY THE PRINTER STYLUS BURNING *
* THE PAPER OFF TO REVEAL THE TEXT. *

* AT THE OTHER END OF THE SCALE THERE WAS THE, PROFESSIONAL ONE ZX *
* THERMAL PRINTER, WHICH BOASTED, PROFESSIONAL HIGH PERFORMANCE, *
* 40 COLUMN LINE, TOTAL INTERFACING, QUIET PERFORMANCE, THIS MODEL *
* WOULD COST YOU £94 50P PLUS £16 47P TO COVER VAT AND POSTAGE, *
* WELL REALLY I COULD GO ON AND ON LISTING THE VAST AMOUNT OF *
* HARDWARE THAT WAS AVAILABLE FOR THE ZX81, BUT I THINK BY NOW YOU *
* HAVE A FAIR IDEA. *

* FOR ANY MEMBER WHO IS INTERESTED YOU CAN STILL PICK UP ZX81'S AND *
* LOADS OF SOFTWARE CHEAPLY AT BOOTSALES, FAIRS, ETC. *

* ANYWAY I WOULD LIKE TO GO ON NOW, I HAD MY ZX81 BUT WAS BUSY WHAT *
* WITH WORKING TWELVE HOUR SHIFTS AND HELPING TO BRING UP A FAMILY *
* IT DID NOT LEAVE ME A LOT OF TIME, BUT I STILL TRIED TO GET TO *
* GRIPS, AND AT THE AGE OF 58 IT WAS HARD, PLUS THE FACT THAT I WAS *
* A SLOW LEARNER AT SCHOOL, *
* THIS MADE IT STILL MORE DIFFICULT TO LEARN COMPUTING, SO I KEPT *
* IN TOUCH WITH THE COMPUTING WORLD VIA MAGAZINES IE, SINCLAIR USER *
* YOUR SINCLAIR, COMPUTER EXPRESS AND THE CRASH, BUT WITHOUT HANDS *
* ON THEY WERE A POOR SECOND FOR THE COMPUTER. *

* NEXT MONTH I WOULD LIKE TO GO ON AND TELL YOU HOW MY LIFE CHANGED *
* WHEN I BECAME REDUNDANT, AND HOW I MET MY FIRST SPECTRUM. *

* IF ANY MEMBER WOULD LIKE ME TO WRITE SOMETHING ON A SPECIFIC *
* PIECE OF HARDWARE OR INDEED SOFTWARE AS I WEND MY WAY THROUGH THE *
* SPECTRUMS PAST, THEN PLEASE WRITE IN TO ARNOLD C/O SPECTRUM U.K. *
* AND I WILL DO MY BEST FOR YOU. *

EXCLUSIVE

Bit Machine presents the first review of the Sinclair ZX Microdrive and software

...the response of reading back ... the program as the program ...



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The Microdrive ... the program as the program ...

The Microdrive ... the program as the program ...

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The Microdrive ... the program as the program ...

Software protection

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The Microdrive ... the program as the program ...

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AT LAST! THE

EXCLUSIVE

Bill Hoskins presents the first review of the Sinclair ZX Microdrive and interface

The Sinclair Microdrives are here! At last! These long awaited devices have finally appeared on the market, over a year after the first 'prototype' was shown at the Spectrum launch in April 1982.

After many false rumours about mini-discs, and credit card type media, the Microdrive turns out to be, after all, a very fast continuous tape loop system. The Microdrive does not work on its own however — it requires a special interface.

The ZX interface 1, previously known as the expansion module, is a wedge-shaped box that plugs into the back of the Spectrum, and sits underneath it, tilting the keyboard up at about 20 degrees. It is actually screwed on to the Spectrum, to prevent any 'wobble', such as that of the infamous ZX81 Ram packs. This design can cause problems for users (like myself) who have their Spectrums in other cases, but is ideal for the majority who do not.

The interface adds three features to the Spectrum — a Microdrive controller, an RS232 interface, and networking capability. It does all of this using existing Basic statements.

The electronics inside the interface contain the extra routines to control the peripherals in an additional 8K Rom, as well as circuitry to convert between serial and parallel for the Microdrives, and to convert the RS232 voltage levels. Hardware add-on companies will be relieved to know that only the address lines stated in the original manual are used, so most accessories should be compatible. However, it may be incompatible with the forthcoming Rom cartridge adapter, and the Timex version of the Spectrum.

Each Microdrive is about 8 × 9 × 5 cm in size, and looks similar to the original Spectrum advertisements with the famous 'coming soon' title. Up to eight Microdrives can be connected at one time, with the first one connected to the left-hand side of the interface, via a short cable — subsequent Microdrives connect into the side of the first.

The Microdrives use tiny 'cartridges', about 30 × 43 × 5 mm in size, that contain the 16ft of very narrow tape that the data is stored on. An LED indicator shows when the drive is in action. No cartridge should be in a drive either when the power is first applied, or when it is disconnected, else damage may result.

The demonstration cartridge to be included with each Microdrive has several programs on it. The first is called "Run", and automatically Loads and Runs when you type Run after switching the machine on. Any program called "Run" in drive 1 will do the same.

To use your own cartridges, each one must first be set up, with the *Format* command. This configures the cartridge, and wipes it clean. For this latter reason it is important never to *Format* a used cartridge, as all your programs will be erased. The statement has the general form:

```
FORMAT "m";d;"name"
```

where 'd' refers to the drive number (from 1 to 8) and "Name" is the title permanently assigned to the cartridge. As will be seen, the *Format* command also has other functions — the first single-letter string determines it — "m" in this case.

The procedure for *Saving* programs and data to cartridge is similar to that used for cassette. For example, to *Save* a program called "Test" to a cartridge in drive 3, one uses *Save "m";3;"test"*. This syntax is not accepted by a Spectrum, unless the interface is connected.

Software protection

As with cassette, programs, arrays, bytes and screens can be *Saved* and *Loaded* (but about 50 times quicker), though there are a couple of differences. The first point is that you cannot *Load* null string files; eg, *Load "m";3;" "*, and the second is that a program *Saved* with *Line*, such that it auto-executes, cannot be *Merged*. This latter feature has been added, I suspect, to protect commercial software.

Another protection feature is that a file with a name starting with *Chr\$ 0* will not appear in the cartridge catalogue, and thus will be invisible to the user. The statement *Cat d* (where 'd' is the drive number) lists on the screen all the files on that cartridge, except for the 'invisible' ones already mentioned. It also shows how long each file is, and how much room is left on the cartridge.

In addition, this statement shows how much of the 100K cartridge is actually in working order (!) — the manual says that at most only 10 percent of it will be unusable at any time. The manual also

stresses the importance of keeping backups on cassette, as the life-span of a cartridge is, it says, limited. Just how limited is not yet known!

Each cartridge has a write-protect tab, similar to cassettes, that can be poked out



Sinclair computer engineer John Mathieson

with a screwdriver to prevent erasure of files, or re-formatting. It can be covered with tape at a later date, to allow you to write it again.

It is also possible to do limited file-handling with the Microdrives, but only serial-access files are permitted and even they have limitations. To create a file, the *Open* statement must be used to create a stream. Usable streams are numbered from 4 to 15, and to use, say, stream number 4 with drive number 6 the required statement would be:

```
OPEN #4;"m";6;"test"
```

which would prepare the file "test" for writing to or reading from (but not both). To send data to it, use *Print #4;* followed by the data. To read data from it, the statement *Input #4;* will read variables, or the *Inkey#4* statement can be used to read the file a byte at a time.

The file-handling in general is not as flexible as one would expect when using a true disc-based system. The Microdrives do have a slow access time compared to discs, of about 3.5 seconds, but the transfer rate, of around 16K bytes per second is just as fast, if not faster. This means that the Microdrive usually takes much longer to find a program on the cartridge than to read it into memory.

RS232 is an international convention for sending data between computers and other computers or equipment. On the Spectrum it can be used for both input and output, using Basic statements.

There are two types of RS232 files on

AT LAST! THE

the Spectrum — a text file ("t") for sending listings and text, and a binary file ("b") which handles bytes directly with no conversion. For example, with a printer connected to the port, a text file would be most suitable, as the Spectrum keywords are de-tokenised into individual characters.

A stream must first be opened, and then configured. To open a stream for RS232, statements take the form:

```
Open #c:£$
```

where 'c' is the stream number, and £\$ is the single character filename. For an RS232 text file, on stream 4, this would be:
OPEN #4:"t"

Next, the baud rate (which is the speed of data transfer) must be defined — this is done with the format statement. For a 600 baud printer, this would be *Format "t";600* (for technical readers, the data is fixed at 8-bit, no parity and one stop bit).

When a stream has been configured, as just described, data can be sent and received from whatever is connected. In this example, a program listing can be produced with the *List #4* statement, and text can be sent with the *Print#4* statement.

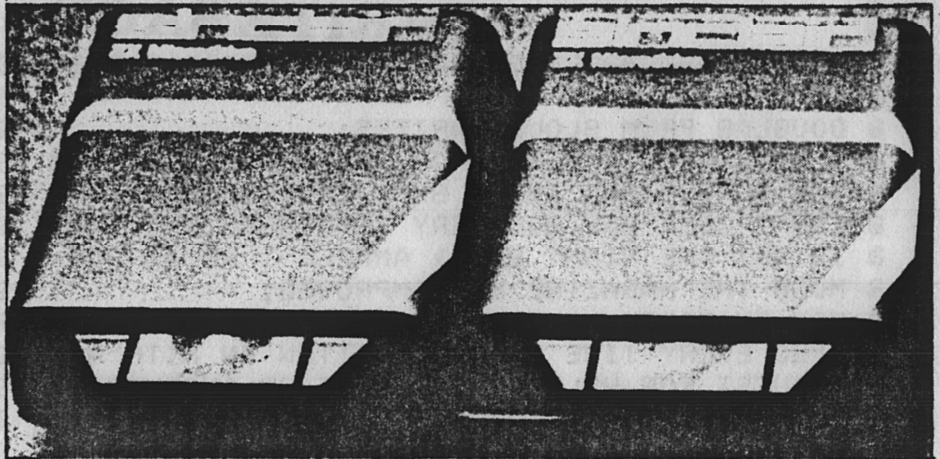
With a text file, all character codes above 164 are de-tokenised into the relevant ASCII characters, and codes below 32 (except 13) are ignored. When a Spectrum code 13 is to be sent, both a carriage-return (code 13) and a line-feed (code 10) are generated, which should be satisfactory for most printers.

However, there is one glaring omission from the RS232 software — you cannot use the *Tab* command with a printer. This will make many existing programs incompatible, as well as making neat output from new programs much more difficult.

To send control codes to RS232 printers, and to up- and down-load programs between computers, a binary RS232 stream should be used. It can be set up by a similar method to the text file, but with the filename "b". This stream does no conversion of characters, so listings are sent as bytes with no de-tokenisation, and line-feeds are not generated after carriage-returns. In addition, *Input #* and *Inkey#* statements can be used to read characters from an RS232 device, such as a terminal, or another computer.

Although it is not made very clear in the manual, only one RS232 device may be connected at a time. The RS232 socket is a 9-pin D-type socket, as used on most joysticks.

A network is a method by which many computers can be linked by a fast data



transfer method, to communicate between each other, and to 'share' expensive peripherals, such as printers. With the interface, up to 64 Spectrums may be networked via simple 2-core leads terminated in 3.5mm jack plugs.

The data transfer rate is about 5K bytes per second. This incredible speed is due to the fact that no 'handshaking' at all is carried out — if one user sends something to you, and you have not set up your Spectrum to receive it, it is 'lost' — the transmitting Spectrum will not wait for the receiver to be ready, unlike most other data transfer methods, such as RS232.

To use the network for data, *Format* and *Open* statements are again used, with the filename "n". *Print#*, *Input#* and *Inkey#* commands are used to transfer data, in a similar way to the Microdrives and RS232.

Share expensive peripherals

It is also possible to transfer programs, again at about 5K bytes a second, between users. For example, suppose you have a program in station 1, and your friend at station 4 would also like it — first of all, he types:

```
LOAD ""n";1:"filename"
```

to inform his Spectrum to wait for a program. Then you type:

```
SAVE ""n";4:"filename"
```

and almost immediately your friend has your program. If required, he can then *Verify* it. As with the usual *Save* and *Load* statements, bytes, screens and arrays can be transferred between users.

As well as device-specific commands, there is a general purpose *Move* command, that copies data from one device to another of any sort. It can also be used to copy files from one cartridge to another, so one of the first things that the software companies will come up with must be a method to prevent the command being

used to pirate their software.

When using the interface, 16K owners in particular should be aware of the amounts of Ram that it uses to operate — each Microdrive stream uses just under 600 bytes, and when networking a further 200 bytes are required.

Compatibility with most existing cassette software should not be a problem, memory space permitting, but certain programs having machine-code in Rem statements will no longer work. This is because the memory location at which a Basic program begins, which is 23755 on a bare Spectrum, can, and does, move about when the interface is connected. Most companies, who read the relevant section in the original Spectrum manual, will not be surprised by this and have already catered for it, but there are a few whose software will no longer Run.

Conclusions

Well, Sir Clive has done it again! After slashing the prices of home micros, he is now set to slash the prices of disc-type storage devices. The Microdrive may not be as good as a 5¼in disc drive, but it is almost as fast, and about a tenth of the price! It makes the (more expensive) dedicated cassette players for machines seem ridiculously obsolete and over-priced.

The RS232 facility is useful, but not particularly well implemented — it is much easier to drive printers from any of the independent Centronics-type interfaces now available for the Spectrum. The networking facility should make it more attractive to schools, but stand-alone Spectrums with a Microdrive are so cheap that the whole point of networking seems to have been lost.

The product is excellent — let us hope that the delivery delays of about three months for every new Sinclair product since the MK14 are not repeated. ■

MICRODRIVE

WRITEBACK

DOUGLAS FROM SLOUGH WRITES:
I HAVE BEEN A MEMBER OF SPECTRUM U.K. FROM THE VERY FIRST ISSUE BACK IN NOVEMBER, AND CAN I JUST SAY HOW VERY IMPRESSED, (NO THAT IS NOT THE RIGHT WORD) AMAZED I AM AT HOW MUCH THE MAGAZINE HAS IMPROVED, HOW ON EARTH HAVE YOU MANAGED TO DO IT?... ALSO EVERY TIME I HAVE WRITTEN IN WITH A REQUEST FOR HELP OF ONE SORT OR ANOTHER YOU INSTANTLY REPLY? HOW MANY PEOPLE ACTUALLY WORK FOR THE MAGAZINE, AND FINALLY MAY I WISH YOU ONLY GOOD FORTUNE FOR THE FUTURE.



JULIE SAYS:
THANK YOU FOR YOUR LETTER DOUGLAS, WE ARE DELIGHTED THAT YOU LIKE THE MAG, YOU ASK HOW WE HAVE MANAGED TO KEEP IMPROVING THINGS? WELL APART FROM GOOD OLD FASHIONED HARD WORK, WE HAVE A TREMENDOUS AMOUNT OF HELP AND ADVICE FROM OUR GOOD FRIENDS THE WRITERS ALL OF THEM LITERALLY WORK THEIR SOCKS OFF WRITING AND IMPROVING EVERYTHING THAT APPEARS IN THE MAG, PLUS ALSO THE HELP AND ADVICE THAT MANY MEMBERS WRITE IN TO US. SO YOU SEE SPECTRUM U.K. IS ALL OF YOU, EVERYONE OF YOU ARE IN ONE WAY OR ANOTHER RESPONSIBLE FOR ALL THE IMPROVEMENTS THAT YOU SEE. AS REGARDS INSTANT REPLIES TO LETTERS, WELL THAT IS SIMPLE, WE GAVE UP A TERRIBLE HABIT..... SLEEPING.

CRAIG FROM BLYTH WRITES:
I HAVE JUST RECEIVED ISSUE 5 OF SPECTRUM U.K. AND AM DELIGHTED, HOWEVER IS THERE SOME SORT OF PROBLEM WITH CODE CRUNCHER, WHATEVER I DO I CANNOT LOAD THE CAPTAINS CODE? IS IT ME, OR IS IT THE CAPTAIN... IF IT IS ME... THEN WELL, PUT IT DOWN TO THE FLU?, HOWEVER IF IT IS THE CAPTAIN THEN HE HAS OBVIOUSLY BEEN EXPOSED TO THE DREADED KRYPTONITE. PROBABLY FROM THAT KIDS BIKE HE MENDED... IF THAT IS THE CASE THEN 'GET WELL SOON CAPTAIN' AND REST ASSURED LOIS LANE HAS BEEN NOTIFIED AND IS AT THIS MINUTE COMING TO YOUR RESCUE. PS, SPECTRUM U.K. IS GREAT.

JULIE SAYS:
YES CRAIG YOU WERE RIGHT THE CAPTAIN WAS CERTAINLY UNDER THE INFLUENCE... KRYPTONITE IS ALWAYS THE DOWNFALL OF A HERO, BUT I CAN TELL YOU NOW THAT THE CAPTAIN HAS BEEN INTO RE-HAB ALONG WITH ROY, AND I AM HAPPY TO TELL YOU THAT HE IS AS RIGHT AS RAIN NOW AND ALL PROBLEMS ARE SOLVED IN HIS ARTICLE IN THIS ISSUE. AS FOR ROY... A SORRY CASE I AM AFRAID.

WRITEBACK



JENNIFER FROM HARTLEPOOL WRITES:
TWO MONTHS AGO I WAS ALL SET TO SELL MY
SPECCY EQUIPMENT BECAUSE THERE WAS NO REAL
SUPPORT OR HELP FOR THE SPECTRUM, THEN I
REPLIED TO ONE OF YOUR ADS THAT APPEARED IN
MY LOCAL PAPER? HOW DID YOU DO THAT BY THE
WAY...

ANYWAY NOW TWO MONTHS ON AND I AM JUST SO
GLAD I JOINED, EVERY MONTH MY FIRST STOP IN
THE MAG IS, BACK TO BASICS, WRITTEN BY
DAVID GWYER, IT IS BRILLIANT AND SO EASY TO
UNDERSTAND.

SO MAY I THROUGH THIS LETTER EXPRESS MY
THANKS AND GRATITUDE TO DAVID FOR DOING A
GREAT JOB, AND ALSO I WOULD LIKE TO THANK
EVERYONE WHO HELPS TO MAKE SPECTRUM U.K THE BEST LITTLE MAGAZINE
EVER FOR THE SPECTRUM. THANK YOU ALL FOR YOUR WORK IT IS GREATLY
APPRECIATED.

JULIE SAYS:

WE REMEMBER YOUR LETTER WELL JENNIFER, ROY SAID AT THE TIME,
THERE... IS A LADY THAT HAS LOST HOPE...
AND I SAID SHE WILL JOIN US FOR SURE, WHO WAS RIGHT THEN ROY,
NOW LETS SEE IF I CAN REMEMBER WHAT THE BET WAS? OH YES...
DON'T FORGET THE HAT BAND COUNTS AS PART OF THE HAT.
THANK YOU VERY MUCH FOR YOUR WONDERFUL LETTER JENNIFER,
AND WELCOME TO SPECTRUM U.K.

CHRISTIAN FROM FRANCE WRITES:

I LEARN WITH INTEREST THE EXISTENCE OF SPECTRUM U.K.
I NEVER HEARD ABOUT YOU BEFORE, I HAVE APPRECIATED YOUR STATEMENT
ABOUT YOUR SOLE AIM BEING TO KEEP THE SPECTRUM ALIVE.
THIS SCOPE IS THE SAME AS FOR ME AND MY MEMBERS AND A NUMBER OF
OTHER ENTERPRISES OVER HERE, LET US JOIN TOGETHER TO FURTHER THE
CAUSE, DO YOU AGREE THAT STRENGTH IS IN UNITY,
BEST COMPLIMENTS, CHRISTIAN AYMARD.

JULIE SAYS:

THANK YOU FOR YOUR LOVELY LETTER CHRISTIAN, YOU HAVE JUST MADE
CONTACT WITH THE LARGEST USERGROUP FOR THE SPECCY ANYWHERE IN THE
U.K. STRENGTH IS INDEED IN UNITY, AND WE WELCOME YOU TO JOIN WITH
US IN TAKING THE SPECTRUM TO NEW HEIGHTS, OR TO PUT IT IN ROYS
WORDS... THE SHOWS NOT OVER UNTIL THE FAT LADY SINGS.

KEEP YOUR LETTERS COMING IN FOLKS TO SPECTRUM U.K. USUAL ADDRESS.
THANKS TO ALL THE MEMBERS WHO WROTE WISHING US WELL.



STAR LETTER



 * ELAINES LETTER *
 * WRITTEN BY ELAINE ROSIER *

DEAR ROY AND JULIE,
 APPOLOGIES FOR NOT HAVING REPLIED EARLIER, BUT I'VE BEEN RUSHED
 OFF MY FEET AT WORK, AND WHEN AT HOME I'M ADDICTED TO 'SPECCKYING'
 YES - I AM HOOKED GOOD AND PROPER.

FIRST OF ALL THANKS A MILLION FOR ALL THE HELP AND CONFIDENCE YOU
 HAVE GIVEN ME, YOUR EXTREMELY PROMPT REPLIES ARE BRILLIANT, I'VE
 GOT TO THE STAGE WHERE IF I HIT A COMPUTER PROBLEM I TRY NOT TO
 GIVE UP UNTIL I CAN RESOLVE IT, (NOT ALWAYS I HASTEN TO ADD) BUT
 I'M DETERMINED NOT TO BE BEATEN IF I CAN HELP IT.

SEVERAL TIMES I HAVE HAD TO GIVE UP AT 2AM (BECAUSE MY EYES ARE
 SO BLEARY THAT I AM NOT FOCUSING ON THE KEYBOARD PROPERLY, SEE
 TOLD YOU I WAS ADDICTED),
 THEN ALONG COMES A LETTER FROM YOU OR YOUR MAGAZINE AND USUALLY
 THE ANSWER IS THERE.

BY THE WAY I THOUGHT MARCH'S ISSUE WAS BRILLIANT, HOW DO YOU FIND
 THE TIME WITH A FAMILY AS WELL, I TAKE MY HAT OFF TO YOU,
 I DONT WANT TO SOUND LIKE AN 'OSCAR NOMINEE' BUT I WOULD LIKE TO
 SAY A BIG THANK YOU TO ANGUS PATERSON WHO HAS BECOME MY MENTOR,
 HIS HELP HAS BEEN INCREDIBLE - A BRILLIANT PROGRAMMING BOOK -
 PUTTING 'TASWORD 2' AND 'VALHALLA' ONTO DISK FOR ME, RESOLVING
 GOODNESS ONLY KNOWS HOW MANY PROBLEMS FOR ME, AND NOW HE IS MAKING
 UP A PRINTER LEAD FOR US.

YES.. WE HAVE MANAGED TO ACQUIRE AN EPSON FX100+PRINTER, (IN GOOD
 WORKING ORDER FOR.. WAIT FOR IT £20), AND RAMPRINT WITH RAMWRITE
 BUT IT WONT WORK WITH OUR +3, SO GOOD OLD ANGUS IS MAKING US A
 LEAD.

ALSO OUR THANKS GO TO KAREN MOORE, WHO HAS BEEN WRITING TO OUR
 DAUGHTER RHONDA - SHE VERY KINDLY SENT HER A COPY OF 'NOTEPAD' TO
 COMMUNICATE WITH, SHE TOO HAS BEEN VERY HELPFUL AND KIND.

BOTH OF THESE PEOPLE WE'VE ONLY BEEN IN CONTACT WITH BECAUSE OF
 SPECTRUM U.K. I ALSO WANT TO THANK YOU FOR LAST WEEKS LETTER YOU
 SENT MY HUSBAND (NOT A SPECCKY FAN - MORE FOOL HIM) AND I WERE
 VERY GRATEFUL FOR YOUR THOUGHTFULNESS, RHONDA HAS HASTILY DASHED
 OFF A LETTER TO THE ROYAL MAIL ADDRESS YOU SENT.

THANKS ALSO TO 'ASK BILL' FOR HIS ANSWER ON 'TASWORD' PROBLEMS.

AT THE MOMENT I AM HOOKED ON 'TRIVIAL PURSUITS' AND RHONDA HAS
 LEFT HER BELOVED 'VALHALLA' AND IS CONTINUALLY PLAYING 'YES PRIME
 MINISTER', NEWLY ACQUIRED AT A CAR BOOT SALE.



STAR LETTER



 * ELAINES LETTER *
 * WRITTEN BY ELAINE ROSIER *

WE'RE LOVING YOUR BASIC PROGRAMMING COURSE BUT HAVEN'T YET DARED
 ATTEMPT THE MACHINE CODE COURSE, YES I DO KNOW MY LIMITATIONS,
 I AM SAVING THAT FOR WHEN MY CONFIDENCE GROWS EVEN MORE.

WITHOUT MEANING TO SOUND DRAMATIC - KNOWING YOU'RE NOT ALONE AND
 THAT SOMEONE ELSE MAY HAVE EXPERIENCED THE SAME HITCH AS YOU AND
 CAN PROBABLY HELP IS FANTASTIC.

WHEN WE FIRST ACQUIRED OUR +3 AND IN THOSE DARK DAYS BEFORE
 SPECTRUM U.K. CAME INTO OUR LIFE - I FELT AS IF I WAS BASHING MY
 HEAD AGAINST A BRICK WALL AND I ALSO FELT SO IGNORANT.

THE CONFIDENCE I HAVE GAINED IS TERRIFIC,
 I PRACTISE STRESS RELIEF WITH MY PATIENTS, THESE DAYS MY STRESS
 RELIEF IS A GOOD 3 HOURS AT NIGHT WITH MY SPECCY,
 THANKS IS NOT REALLY ENOUGH TO EXPRESS HOW GRATEFUL I AM TO YOU
 ALL.

ONCE AGAIN MANY THANKS,
 ELAINE ROSIER AND (RHONDA).

BECAUSE OF THE MANY LETTERS WE RECEIVE EACH MONTH WE HAVE DECIDED
 TO NOMINATE ONE FROM THE MAIL TO BE 'THE STAR LETTER OF THE MONTH'
 AND WE SHALL PRINT THE STAR LETTER IN ITS ENTIRETY AND ALSO AWARD
 A PRIZE SO COME ON FOLKS GET WRITING.

MISS KAREN MOORE
 348 QUINTON
 LOWER FALINGE
 ROCHDALE LANCS OL12-6RE

KAREN IS IN THE PROCESS OF PUTTING TOGETHER SPECTRUM PENPAL U.K.
 SHE HAS MANY FRIENDS IN THE U.K AND OVERSEAS WHO OWN SPECTRUM
 COMPUTERS SHE WANTS TO KNOW IF THERE ARE ANY MEMBERS OF ANY AGE
 GROUP WHO WOULD BE INTERESTED IN CORRESPONDING WITH A FELLOW
 SPECCY LOVER.

IF THERE ARE ANY MEMBERS WHO ARE INTERESTED IN BECOMING A PENPAL
 THEN PLEASE WRITE TO KAREN AT THE ABOVE ADDRESS.

SPECTRUM U.K. NEXT ISSUE OUT ON TUESDAY 10/5/94

QUESTER'S QUORUM



WELL ANOTHER MONTH GONE BY AND THE SPECTRUM CONTINUES TO GROW IN STRENGTH. THIS MUST BE GOOD NEWS FOR ALL US ADVENTURERS. LET'S BEGIN BY LOOKING AT A COUPLE OF READERS LETTERS. FIRSTLY WE HAVE : BOB CHAPMAN FROM MILTON KEYNES. BOB IS A KEEN FAN OF 'THE HOBBIT' AND WOULD LIKE TO SEE A FEW HINTS FOR THIS GAME. I HAVE HAD A WORD WITH OUR OLD PAL WOLFGANG AND HE FEELS THAT TO DO SO COULD SPOIL THE ENJOYMENT OF OTHERS, WHO DO NOT WISH TO SEE A HOST OF CLUES FOR ONE PARTICULAR GAME. FAR BETTER IF PEOPLE ASK ABOUT INDIVIDUAL PROBLEMS. IF YOU WANT A COLLECTION OF TIPS THEN FOR ALL YOU 'HOBBIT' FANS WHO DO NOT ALREADY OWN IT, WHY NOT TRY TO OBTAIN A

COPY OF 'A GUIDE TO PLAYING THE HOBBIT' BY DAVID ELKAN. THIS WAS PUBLISHED BY MELBOURNE HOUSE (ISBN 0 86161 1616). IT IS A COMPLETE SOLUTION TO THE GAME, BUT IF USED WISELY NEED NOT SPOIL YOUR ENJOYMENT. EACH LOCATION IN THE GAME IS COVERED IN A SEPERATE SECTION AND IS INDEXED IN THE FRONT OF THE BOOK. THEREFORE BY CONSULTING THE INDEX WHEN TRULY STUCK, YOU CAN CONSULT ONLY THE SECTION THAT CONCERNS THE LOCATION IN WHICH YOU ARE HAVING TROUBLE. ANOTHER ALTERNATIVE IS MIKE GERRARDS EXCELLENT BOOK 'ADVENTURES ON THE SPECTRUM', WHICH ALSO CONTAINS A FULL SOLUTION. ALTHOUGH BOTH ARE NOW SADLY OUT OF PRINT, AN ADVERT IN MICROMART OR YOUR LOCAL PAPER MAY BRING RESULTS.

NEXT WE HAVE TIMOTHY GRATTON FROM CLECKHEATON WHO WOULD LIKE TO SEE A FEW MAPS PUBLISHED OF POPULAR ADVENTURE GAMES. THE PROBLEM HERE ONCE AGAIN IS THE POSSIBILITY OF SPOILING THE ENJOYMENT OF OTHERS. PLUS THE PROHIBITIVE AMOUNT OF ROOM THEY WOULD TAKE UP IN THE MAGAZINE. SINCE I DO NOT LIKE TO REFUSE ANY REQUEST FROM A MEMBER, PERHAPS I CAN SUGGEST AN ALTERNATIVE. SINCE SUCH MAPS ARE DIFFICULT TO OBTAIN, WOULD ANY READERS OF THIS COLUMN LIKE TO SUBMIT MAPS OF GAMES THEY HAVE COMPLETED ? I COULD THEN PUBLISH A LIST AT REGULAR INTERVALS OF MAPS AVAILABLE. ANY MEMBER REQUIRING A COPY OF A PARTICULAR MAP COULD THEN WRITE TO ME REQUESTING IT. I WOULD HAVE TO MAKE A CHARGE OF 35P TO COVER THE COST OF POSTAGE AND PHOTOCOPYING, BUT I DO NOT BELIEVE THAT WOULD DETER MEMBERS. IF YOU FEEL THIS IS A GOOD IDEA THEN LET ME KNOW AND I WILL SET THE WHEELS IN MOTION.

I WOULD LIKE TO THANK THESE TWO READERS FOR THEIR SUGGESTIONS, AND THE KIND COMMENTS THEY MADE ON THIS ADVENTURE SECTION. IT IS FEEDBACK SUCH AS THIS THAT WILL SEE THIS SECTION CONTINUING TO THRIVE. WHILST I AM EXPRESSING MY GRATITUDE TO MEMBERS I MUST NOT FORGET TO INCLUDE KAZ KULAN, PHIL MUSCART AND MR JACKSON. I URGENTLY NEEDED HELP TO CONNECT AN 8056 COMPACT SERIAL PRINTER TO MY +2, THUS ENSURING I HAD A BACKUP WITH WHICH TO WRITE THIS COLUMN IN CASE MY TRUSTY EPSON RX80 EVER BROKE DOWN. THEY KINDLY SUPPLIED ALL THE HELP I NEEDED PLUS LOCATING A SOURCE OF PAPER FOR ME. THANKS A LOT LADS I WOULD HAVE BEEN LOST WITHOUT YOU.

*
* **QUESTER'S QUORUM** *
*



SOME BAD NEWS ON THE SOFTWARE FRONT IN THAT THE ESSENTIAL MYTH NO LONGER PRODUCE SPECTRUM GAMES. THEY HAVE CHANGED THEIR NAME TO THE THOUGHT TRAIN AND ARE BUSY WRITING SOFTWARE FOR THE CD ROM. KEEP AN EYE OUT FOR THEIR TITLES IF YOU ALSO OWN ONE OF THESE.

MY LETTER TO CENTRAL SOLUTIONS WAS RETURNED 'NO LONGER KNOWN AT THIS ADDRESS'. IF ANYONE HAS ANY RECENT KNOWLEDGE OF THEM THEN PLEASE LET ME KNOW.

I WOULD ALSO BE VERY GRATEFUL IF ANY READER COULD SUPPLY A CURRENT ADDRESS FOR EITHER ZEPPELIN GAMES OR LOGIC PROGRAMMING ASSOCIATES (LPA). IN FACT IF

YOU CAN SUPPLY THE ADDRESS OF ANY ADVENTURE SOFTWARE PRODUCER PLEASE DROP ME A LINE.

TO CLOSE THIS MONTH I AM ANNOUNCING THE CREATION OF A NEW 'ADVENTURERS HALL OF FAME'. THE IDEA FOR THIS IS QUITE SIMPLE, AS THE ONLY REQUISITE FOR A PLACE IN THE HALL OF FAME IS SOLVING ADVENTURES. EACH MONTH WE WILL BE PUBLISHING A LIST OF MEMBERS OF THIS ELITE COMPANY, ALONG WITH THE GAMES THEY HAVE SOLVED.

IF AT ALL POSSIBLE IT WOULD BE NICE IF THOSE JOINING THIS AUGUST COMPANY WOULD AGREE TO SUPPLY HELP TO OTHERS IF ASKED FOR IT.

I WILL ALSO BE LOOKING INTO THE POSSIBILITY OF MARKING SPECTRUM U.K'S FIRST BIRTHDAY WHEN IT ARRIVES, BY GIVING A PRIZE TO THE ACE OF ACES IN THE WORLD OF ADVENTURES. I WILL CONSULT WITH ROY AND SEE WHAT WE CAN COME UP WITH BETWEEN US.

WELL THAT'S ALL FOR THIS MONTH SO KEEP THOSE LETTERS COMING IN.

THE ADDRESS AS EVER IS EITHER :WOLFANG'S LAIR OR QUESTERS QUORUM.
101 BURY ROAD,
STOWMARKET,
SUFFOLK
IP14-1PD.

QUESTER'S REVIEW



NEW RELEASE NEW RELEASE NEW RELEASE

THIS MONTH WE ARE DELIGHTED TO HAVE ANOTHER NEW GAME TO REVIEW 'GOLDEN FIGURES OF DEATH' IS THE LATEST OFFERING FROM : MARTIN FREEMANTLE OF DREAMWORLD ADVENTURES. ALTHOUGH THE SEQUEL TO AN EARLIER RELEASE 'CURSE OF THE SERPENT'S EYE', IT IS A SEPARATE GAME AND YOU THEREFORE NEED NOT HAVE PLAYED IT'S PREDECESSOR. IT'S A TEXT ONLY ADVENTURE CREATED WITH THE PAW FROM GILSOFT. THIS MAKES A NICE CHANGE FROM ALL THOSE GRAPHICAL OFFERINGS, AND ALLOWS FREE REIN TO YOUR IMAGINATION.

THE CHARACTER YOU CONTROL IN THIS QUEST IS JENNY PERIL, TIMEJUMPER 1ST CLASS (YES LADIES A HEROINE AT LAST). YOUR OLD MENTOR HAS TURNED ROGUE AND TAKEN A TIME CAPSULE TO THE BEGINNING OF TIME, WHERE HE HAS PLACED A BOMB. THE OLD FOOL EVIDENTLY STILL HAS A SOFT SPOT FOR YOU, AS HE HAS SENT YOU A TITANIUM DISK WITH A LETTER. THIS INFORMS YOU THAT THE CODES NEEDED TO DEACTIVATE THE BOMB ARE CONCEALED IN THE METALLIC PROPERTIES OF THREE GOLDEN FIGURINES. THESE HE HAS HIDDEN IN BOTH DIFFERENT TIME ZONES AND GALAXIES. SINCE HE EVIDENTLY DOES NOT BELIEVE THAT YOU CAN RETRIEVE THEM IN TIME WHATEVER HAPPENS, HE HAS PUT THE FIRST TIME CO-ORDINATES ON THE DISK. YOU HAVE HIDDEN THIS IN YOUR TIME CAPSULE FOR SAFE KEEPING.

THE SCREEN DISPLAY FEATURES TWO COUNTERS AT THE TOP, SCORE AND TURNS TAKEN. JUST BELOW THIS IN AN AREA NORMALLY OCCUPIED BY A GRAPHIC, IS WHERE THE TEXT IS DISPLAYED. KEEP A GOOD EYE ON THIS AS YOU CAN EASILY MISS SOMETHING IMPORTANT. THE MAIN COMMANDS ARE BY 1 OR 2 LETTER INPUT, EG. X-EXAM, R-REDESCRIBE, SR-SEARCH PLUS THE USUAL COMPASS POINTS. OTHER COMMANDS SUCH AS TIE OR THROW ARE ENTERED IN FULL. MULTIPLE INPUT IS POSSIBLE AND MAY BE REQUIRED.

THIS GAME HAS A NICE FEEL TO IT AND IS WELL PRESENTED. THE LOCATION DESCRIPTIONS ARE ADEQUATE AND WELL WRITTEN. A RAMSAVE OPTION IS PROVIDED AND YOU MAY WELL NEED IT. THE PROBLEMS HAVE BEEN WELL THOUGHT OUT, BEING BOTH LOGICAL AND SENSIBLY IMPLEMENTED. ALTHOUGH MAINLY SET AT A MEDIUM LEVEL OF DIFFICULTY THERE ARE STILL ENOUGH BRAIN TEASERS TO KEEP THE BEST OF YOU INTERESTED. ONE PARTICULARLY NICE TOUCH, IS THE DIFFERENT SLANT GIVEN TO THE MAZE ELEMENT THAT REQUIRES NEGOTIATING TO DISCOVER THE SECOND FIGURINE. I ALWAYS APPRECIATE AN AUTHOR WHO TAKES THE TROUBLE TO PUT A NEW TURN ON AN OLD HANDLE.

MAPPING IS ONCE AGAIN A NECESSITY WITH THIS GAME. THERE IS A GOOD USE OF VOCABULARY, BUT ONE OR TWO INSTRUCTIONS NEED CAREFUL THOUGHT. THIS IS A GOOD COMPETENT GAME THAT HAS SOMETHING TO OFFER TO BOTH NOVICE AND EXPERT ALIKE. IT IS WELL PRESENTED AND THE THOUGHT THAT HAS GONE INTO IT IS OBVIOUS. I HAVE A CRITICISM, IT IS THAT I WOULD HAVE PREFERRED LONGER MORE DETAILED DESCRIPTIONS, BUT THIS IS A PERSONAL PREFERENCE ONLY. IF YOU HAVEN'T PLAYED ONE OF MARTIN'S GAMES BEFORE THEN THIS IS A GOOD INTRODUCTION TO HIS STYLE.

QUESTER'S REVIEW



ONCE AGAIN THIS MONTH I AM OFFERING A PRIZE TO THE FIRST PERSON TO SOLVE THIS ADVENTURE. JUST SEND ME THE SOLUTION TO THE MAZE I MENTIONED EARLIER, AND THE CODE REVEALED AT THE END TO DIFFUSE THE BOMB. THE PRIZE THIS TIME IS TWO UNPLAYED ORIGINAL GAMES FROM LIVEWIRE SOFTWARE. 'SALVAGE' IS A TEXT AND GRAPHIC ADVENTURE, AND 'CANNIBAL ISLAND' IS AN ARCADE STRATEGY ADVENTURE. THAT SHOULD KEEP YOU GLUED TO YOUR KEYBOARDS FOR A WHILE.

DREAMWORLD STOCK SIX OTHER TITLES, DRAGON SLAYER, DEATH OR GLORY, FINAL BATTLE, SETTLEMENT XIII, SO LITTLE TIME, AND CURSE OF THE SERPENT'S EYE. TAPE AND +D DISKS COST £2.50 EACH, AND THEY CAN BE SUPPLIED FOR THE +3 IF YOU SEND A BLANK DISC AND £2.00. THEY ARE ALSO SUPPLIED FOR THE AMIGA UNDER EMULATION. CHEQUES SHOULD BE MADE PAYABLE TO: MARTIN FREEMANTLE. ORDER FROM: DREAMWORLD ADVENTURES, 10 MEDHURST CRESCENT, GRAVESEND, KENT, DA12-4HL. DON'T FORGET TO MENTION SPECTRUM U.K WHEN WRITING, AND REMEMBER IF WE DON'T SUPPORT THESE INDEPENDENT PUBLISHERS THERE WILL BE NO FUTURE GAMES.



DREAM WORLD ADVENTURES
presents
GOLDEN FIGURES OF DEATH

for the Spectrum

the sequel to Curse of the Serpent's Eye



Tape & +D disk £2.50

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(please send own +3 disk)

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So Little Time

Any 3 on one disk £5.00

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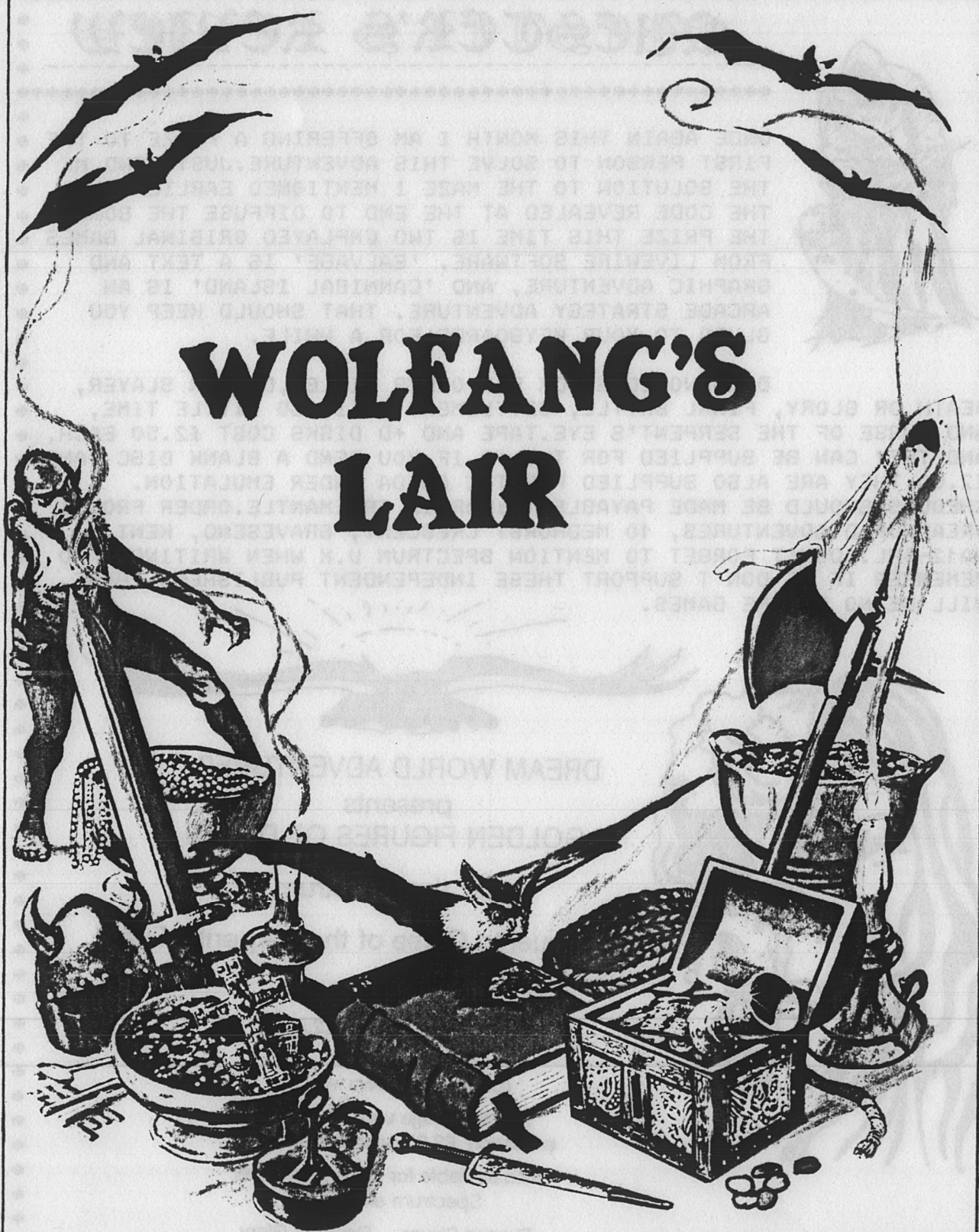
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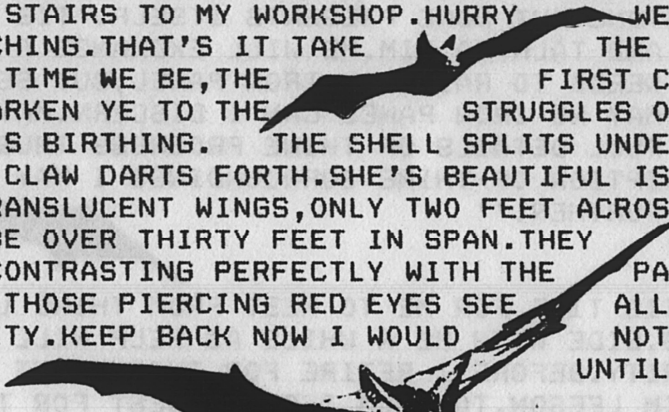
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WOLFANG'S LAIR

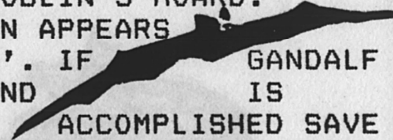


'THOU'VE DECIDED TO JOIN ME THEN ? WELL 'TIS GLAD I AM TO SEE THEE. FOLLOW ME UP THESE WEARISOME STAIRS TO MY WORKSHOP. HURRY WE MUST IF WE ARE TO WITNESS THE HATCHING. THAT'S IT TAKE THE THIRD DOOR ON THE LEFT. AH! JUST IN TIME WE BE, THE FIRST CRACK HAS APPEARED IN THE SHELL. HEARKEN YE TO THE STRUGGLES OF MY CREATION AS IT FIGHTS FOR IT'S BIRTHING. THE SHELL SPLITS UNDER THE PRESSURE AND THE FIRST WHITE CLAW DARTS FORTH. SHE'S BEAUTIFUL IS SHE NOT ? LOOK THOUGH AT THOSE TRANSLUCENT WINGS, ONLY TWO FEET ACROSS NOW BUT IN A FEW MONTHS THEY'LL BE OVER THIRTY FEET IN SPAN. THEY GLOW WITH A THROBBING GREEN FIRE, CONTRASTING PERFECTLY WITH THE PALE BLUE BODY AND THE EBONY HEAD. THOSE PIERCING RED EYES SEE ALL. BEHOLD RALGAR, DRAGON OF PURITY. KEEP BACK NOW I WOULD NOT SEE HARM BEFALL THEE. STAY THERE UNTIL I SUMMON THEE.'

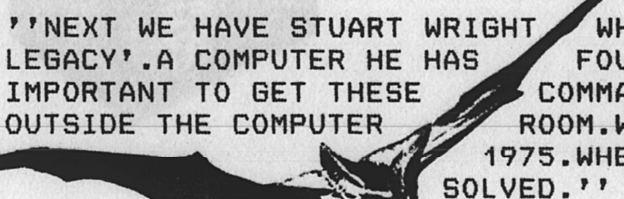



'HAIL RALGAR 'TIS WOLFANG WHO GAVE THEE LIFE WHO GREET'S THEE. I CLAIM MY REWARD, BATHE ME NOW IN THE INTENSITY OF THINE BREATH. THE PAIN IS ALMOST MORE THAN I CAN BEAR. THE PULSATING INTENSITY OF THE BLUE-WHITE LIGHT FILLS MY VERY SOUL THREATENING TO TEAR IT'S VERY FABRIC APART. AH! 'TIS DONE, BUT I AM TOO WEAK TO MOVE. THAT'S IT LAD HELP ME TO MY FEET AND LEAD ME TO MY STUDY. THAT ROOM AT THE END OF THE HALL IS OUR DESTINATION. THANK THEE LAD, JUST EASE ME INTO MY OLD CHAIR. FETCH ME A GLASS OF MEAD FROM THE TABLE WILL THEE LASS ? NOW THAT FEELS BETTER. HOLD FAST THERE I WILL EXPLAIN ALL LATER. PASS ME THAT TOME FROM THE TABLE SO THAT I CAN CAST THE SPELL OF CAPTIVE REFLECTION, I MUST ANSWER THE CRIES FOR HELP THAT ARE RINGING IN MY HEAD.'

'WHOSE FACE APPEARS IN THE MIRROR OF MULTIPLICITY ? 'TIS MIKE LAURENCE STUCK IN A GOBLIN'S DUNGEON IN 'THE HOBBIT'. HEED WELL THE WORDS OF WOLFANG, A SECRET THIS DUNGEON HOLDS THAT MUST BE DUG UP BEFORE ESCAPE IS ATTEMPTED. A TRAPDOOR WILL GIVE WAY TO FORCE ONCE IT IS REVEALED. TAKE THEE THE KEY, BUT TOUCH NOT THE GOBLIN'S HOARD. TO ESCAPE THOUGH MUST WAIT UNTIL GANDALF OR THORIN APPEARS THEN SAY TO THEM 'OPEN WINDOW'. THEN SAY 'CARRY ME'. IF GANDALF THOU USE THEN SAY 'LEAVE', BUT TO THORIN THE COMMAND IS 'GO WINDOW'. HEARKEN WELL NOW FOR ONCE ESCAPE IS ACCOMPLISHED SAVE THINE POSITION, FOR UNLESS THOU BEAREST THE MAGIC RING THOU WILL SOON BE RETURNED WHENCE THEE CAME. IF TWENTY TURNS THOU WAIT OR MORE AND NEITHER CHARACTER APPEARS THEN THEY ARE DEAD. IF THIS BE THE CASE THEN WOE BE TO THEE FOR NO ESCAPE BE POSSIBLE.'

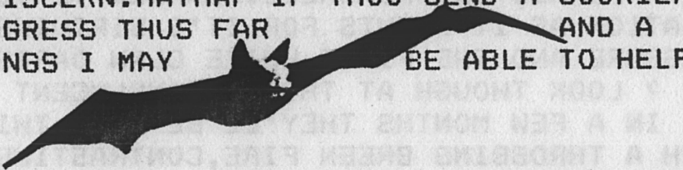


'NEXT WE HAVE STUART WRIGHT WHO IS FIGHTING HIS WAY THROUGH 'THE LEGACY'. A COMPUTER HE HAS FOUND BUT KNOWS NOT HOW TO LOG ON. 'TIS IMPORTANT TO GET THESE COMMANDS RIGHT, SO I WILL BEGIN FROM OUTSIDE THE COMPUTER ROOM. W-SPECCY RULES OK-INSERT DISC-3428 1975. WHEN ALL IS DONE THY PROBLEM SHOULD BE SOLVED.'



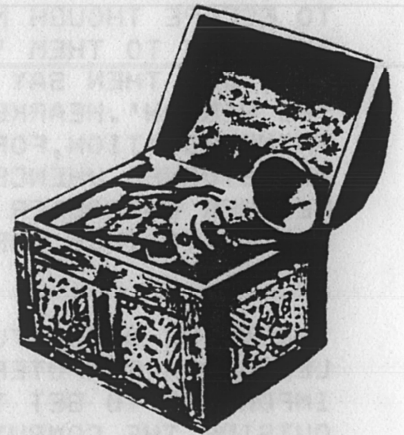


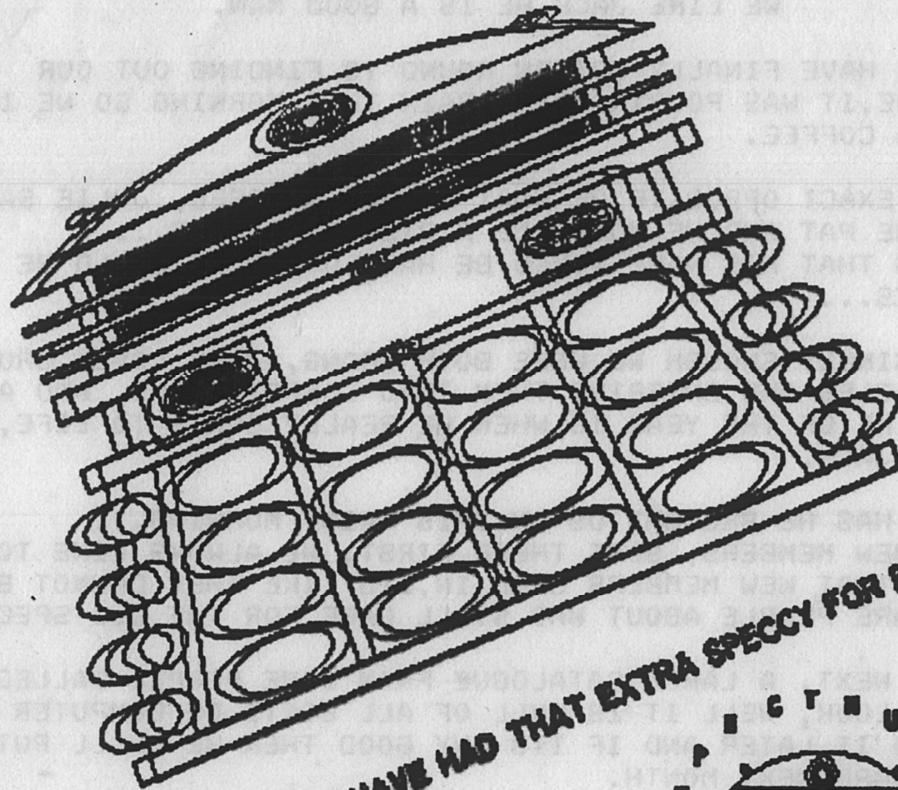
'AH! ANOTHER IS COVERED IN CONFUSION, 'TIS STEVE CHAPMAN WHO IS CONFOUNDED IN 'THE GOLDEN PYRAMID'. HE NEEDS TO FIND A LODESTONE BUT NONE PRESENTS ITSELF. 'TIS A TRIBESMAN THOU NEEDS MUST FIND AND TALK TO HIM. HE WILL EXCHANGE A LODESTONE FOR A KNIFE. STEVEN ALSO NEEDS TO RAISE AN IRON PANEL, BUT SEARCH THE SCROLL OF SOLUTION AS I MAY NO IRON PANEL CAN I DISCERN. MAYHAP IF THOU SEND A COURIER WITH FULL DETAILS OF THINE PROGRESS THUS FAR AND A DESCRIPTION OF THINE SURROUNDINGS I MAY BE ABLE TO HELP THEE FURTHER.'



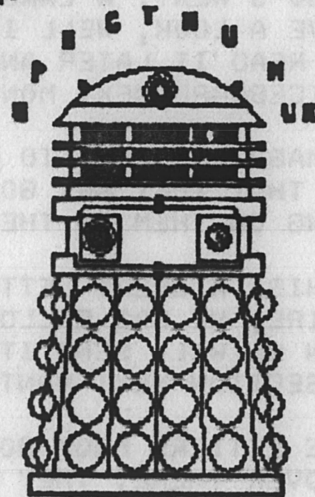
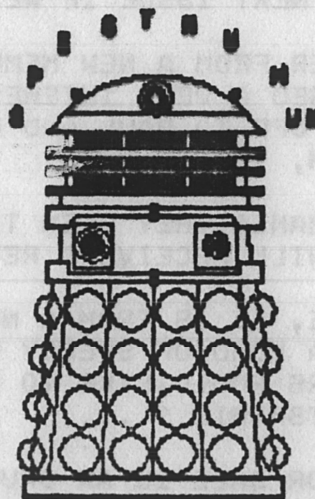
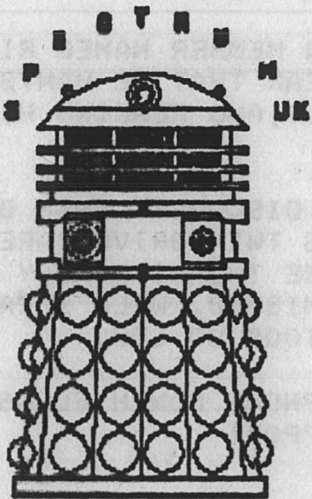
' 'TIS TIME FOR ME TO REST FROM THINE LABOURS FOR I HAVE BEEN SORELY TAXED. BIDE WITH ME A WHILE AS HELP WILL I NEED TO BRING RALGAR TO MATURITY. BEFORE I RETIRE FOR THIS NIGHT MY THANKS MUST I SEND FORTH TO JIM LEESON, TO WHOM I OWE A DEBT FOR THE HINTS THE COURIER BROUGHT CONCERNING THAT MALODOROUS PLACE 'THE PLANET OF DEATH'. ANOTHER WHO WARRANTS WOLFGANG'S GRATITUDE IS PHILIP WHITE OF HARROGATE, WHO CHRONOLOGICAL CLUES ON PART ONE OF WONDEROUS QUEST 'THE LORDS OF TIME'. WITH SO AND MY MOST TAXING TEST YET TO COME, I NEED ALL THE ASSISTANCE YOU CAN GIVE. SEND NOW YOUR HELP TO WOLFGANG LEST I BE UNABLE TO AID ONE OF OUR COMRADES IN DIRE PERIL. MY STRENGTH IS NEARLY DONE AND REST I MUST. SO KINDRED SPIRITS AS EVER MAY THINE GOD WALK ALWAYS BESIDE THEE, AND FARE THEE WELL TILL NEXT WE MEET.'

SENT ME THAT MUCH TO DO





OOOPS I SHOULDN'T HAVE HAD THAT EXTRA SPECY FOR BREAKY



SPREAD THE
WORD